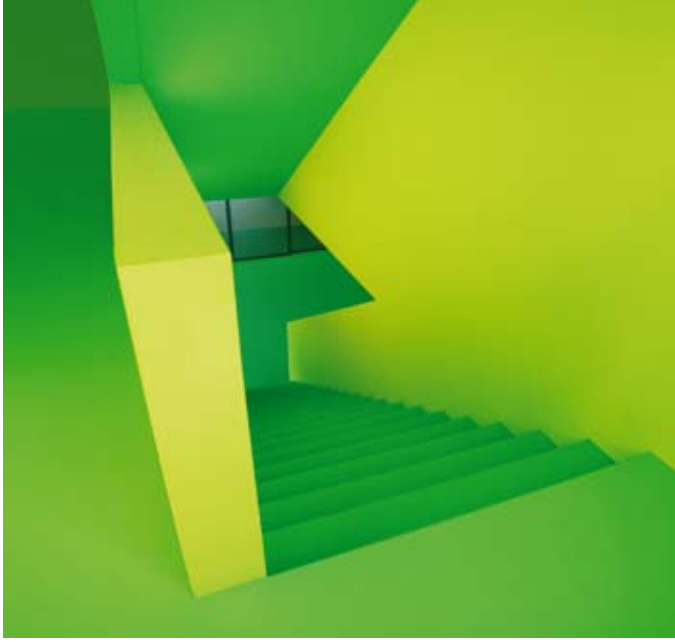
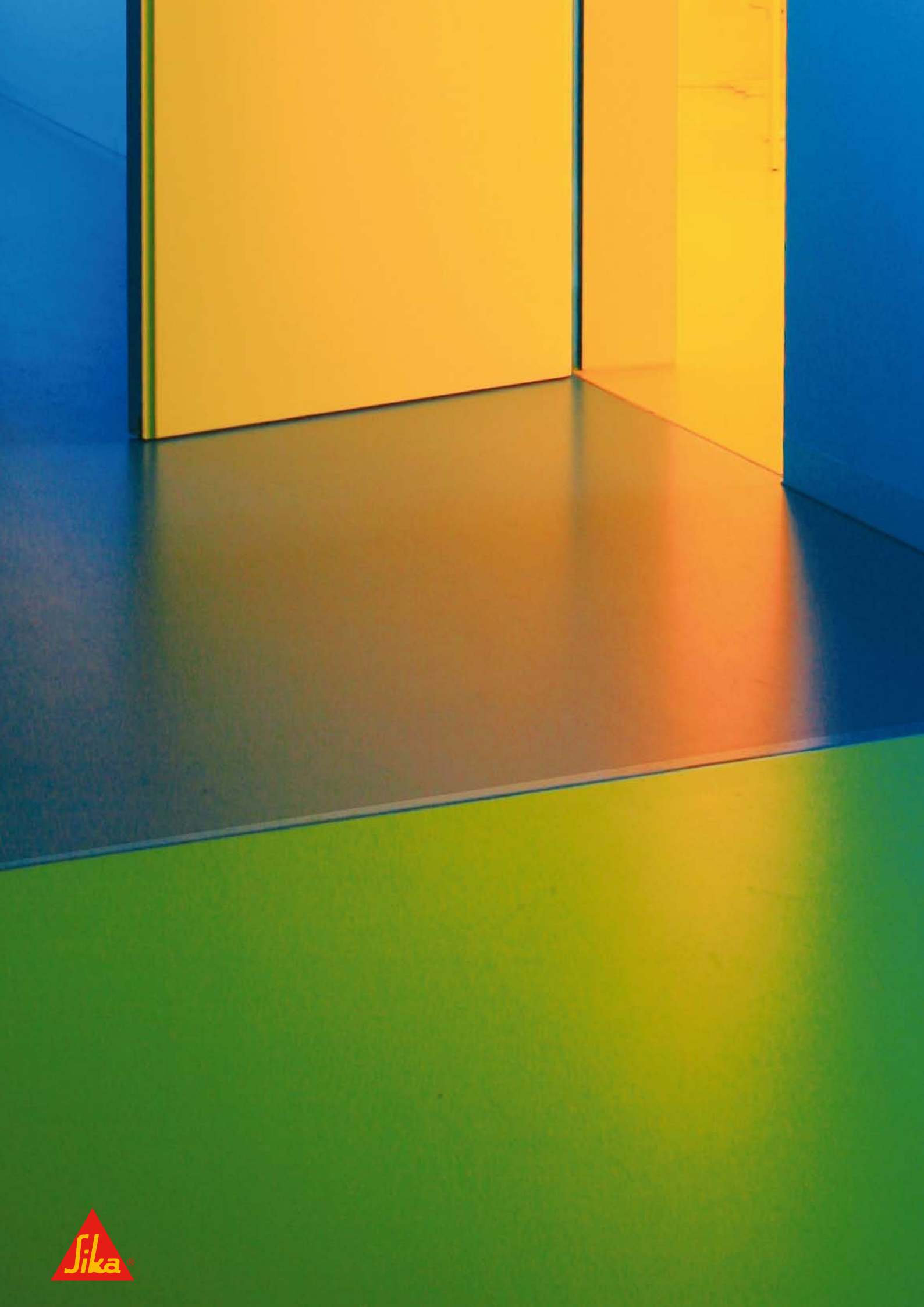


Sika® Technology and Concepts for Flooring and Coating

Innovation & Consistency | since 1910



Sika® Technology and Concepts for Flooring Systems and Applications

As one of the world wide market leader in construction industry, Sika has a strong focus on flooring and coating systems and applications. Sika provides full range of flooring and coating solutions to meet the latest standards and requirements in the construction industry.

To help and support the customer to find the systems to fit to his project requirements, we publish this brochure and this selection guideline. In this brochure the customer will find a basic range of the best performing solutions. In addition there are project specific flooring and coating solutions available, which are not listed in this brochure. Those solutions can be found in related leaflets or on the Internet: **www.sika.com**, where they are regularly updated.

Beside flooring and coating systems, Sika is a full range supplier for construction solutions. With the “Roof to Floor / Basement” approach, Sika is the only one stop shop partner. To understand the full support in your region, please contact your local Sika company.

Your Entire Flooring and Coating Team

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Sika's Industrial Flooring Capability

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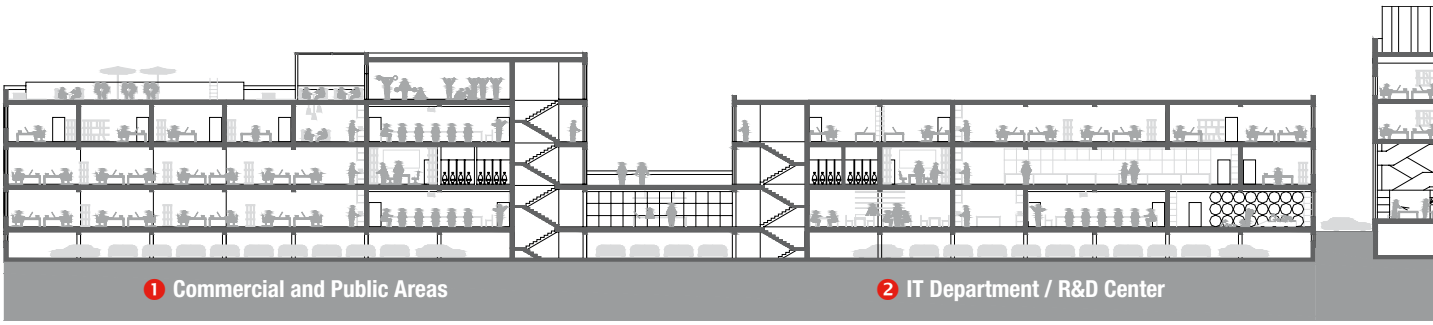
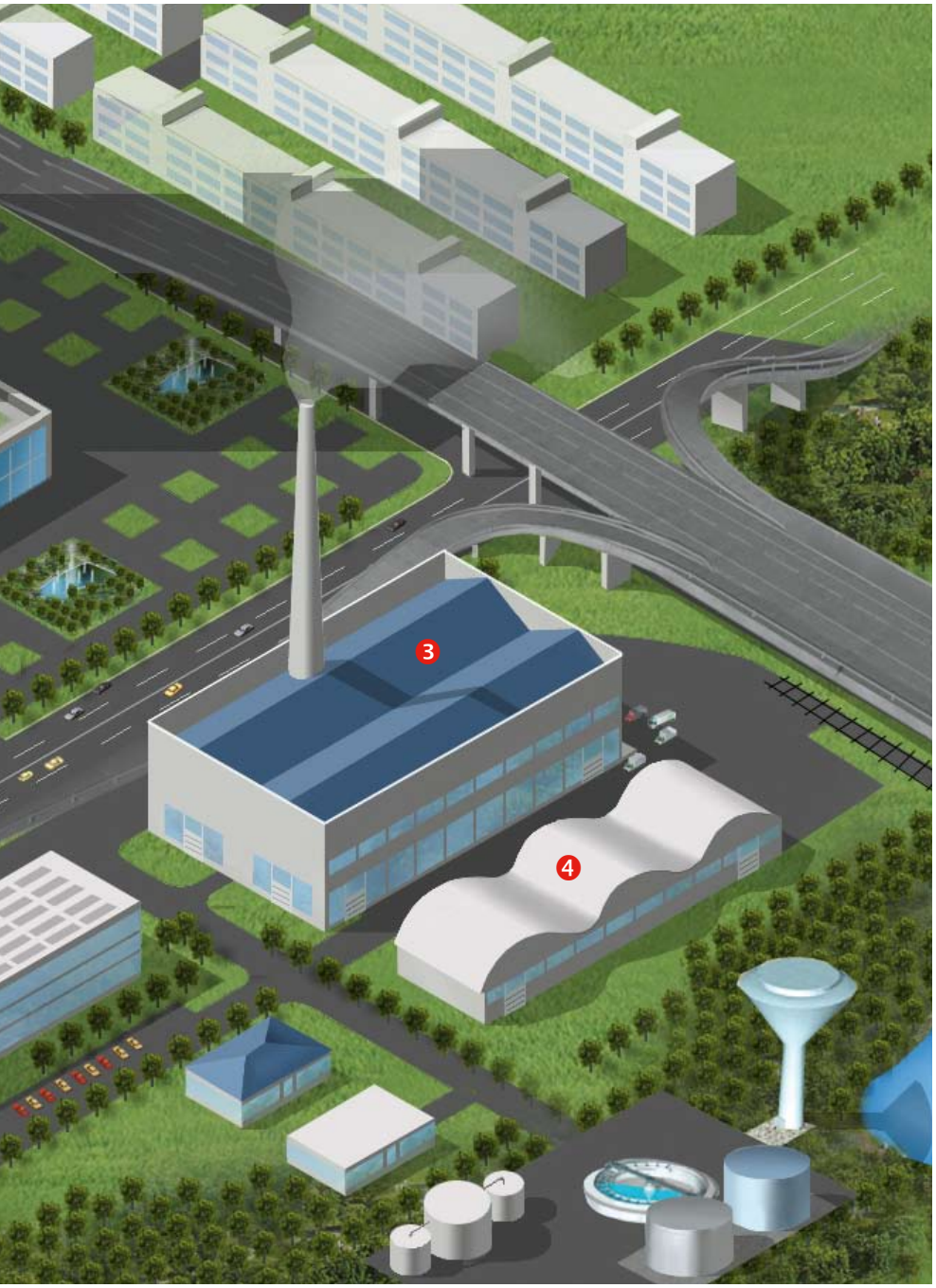
A user-friendly online Factory House Selection Guide is available at www.sika.com





Solutions for Commercial and Public Buildings
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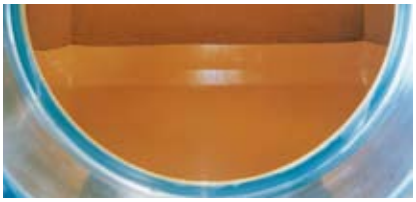

Tank and Bunding Lining Solutions
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Solutions for Acid Proof Coatings and Linings
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Wall and Ceiling Solutions
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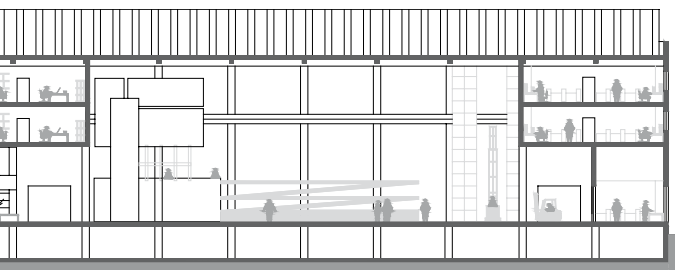
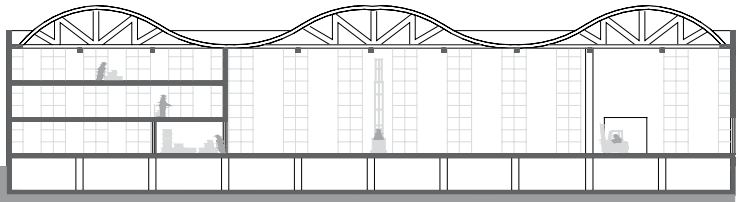
Detailing and Jointing for Flooring Applications
Page 42



3 Production and Processing Areas



4 Storage, Logistic and Sales Areas

Sikafloor® Solutions for Storage, Logistic and Sales Areas

Introduction

Large quantities of goods have to be produced quickly and on time for an efficient economy to function. In the manufacturing industries where these goods are produced, handled and stored, the production lines, warehouses, loading bays etc., all need to have the flooring designed and adapted to suit the specific conditions of each areas operations.
It is always essential to ensure that the stresses generated are not higher than the strength of the flooring system. Therefore, fully understanding the areas operations and the floors performance requirements are most important. This includes the mechanical and chemical resistance, plus ease of cleaning, and dust prevention etc.

New Buildings

Concrete slabs with mix designs using **Sikament®** or **Sika® ViscoCrete® SCC** technology form a sound foundation and allow accurate levels with falls to be achieved.
Sikafloor® "dry shake" solutions are applied as dry powders, directly onto the surface of the freshly laid concrete and then powerfloat finished. The special ingredients release excess moisture from the concrete, which results in the material hardening at a very low water-cement ratio and monolithically with the base concrete. This creates an integrated and extremely hard-wearing floor.
Concrete surface hardeners, plus curing and surface sealing compounds complete the **Sikafloor®** range.
Additionally, **Sika® EpoCem®** Technology can also be used on relatively new or "green" and damp concrete as a temporary moisture barrier in order to reduce waiting times for the subsequent vapour tight floor topping system.

Refurbishment

Sikafloor® cementitious, self-smoothing pumped screeds laid from 5 – 25 mm allow the creation of a uniform and levelled surface. These vapour permeable and rapid drying screeds provide very economic solutions. **Sika**® **EpoCem**® Technology is again frequently used in refurbishment projects or during a change of use, when the existing floors have rising or high moisture contents but need to be overcoated.

Racking Areas

Sikafloor® solutions provide a bright coloured floor that can be installed in a wide range of thicknesses and with a variety of surface textures. They are seamless, non-porous and non-dusting with good chemical resistance. These properties make the floor hygienic and easy to clean as well as hard and durable, so they are ideally suited for dry process and racked storage areas.

Cold Storage Areas

Sikafloor® solutions can provide durable flooring solutions for cold storage areas even in the most severe conditions of extreme mechanical, chemical and thermal exposure.

Sikafloor® Solutions for Storage, Logistic and Sales Areas

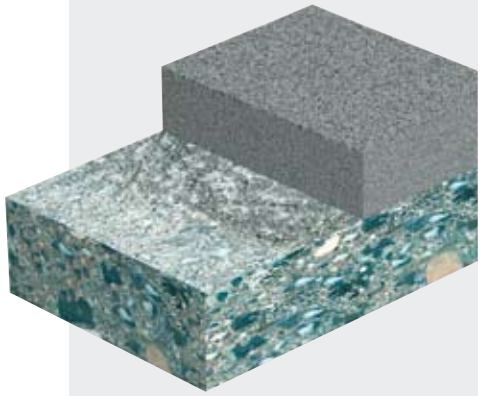
Requirements

Design / Build-up

Sika System / Performance

Two-Layer Concrete Slab for Accurate Levels and Falls

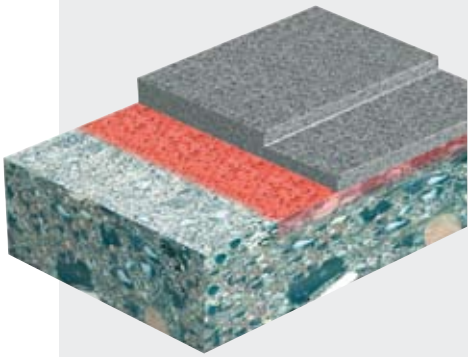
- Adjustment of level tolerances



Concrete slab using **Sikament®** or **Sika® ViscoCrete® SCC** technology. Bonding bridge (Sika polymer-modified cement-sand-water). Sika polymer-modified screed with powerfloat finish

Temporary Moisture Barrier on Self-Smoothing "Green" or Damp Concrete

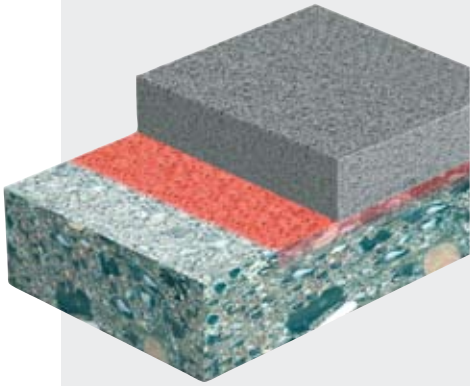
- For cementitious floors with damaged or missing waterproof membrane
- Reduced waiting time to overcoat green concrete
- No blisters on topping when coating damp concrete



Primer: **Sikafloor®-155 WN**
Screed: **Sikafloor®-81 EpoCem®**
Layer thickness: **2 – 3 mm**
or **Sikafloor®-82 EpoCem®**
Layer thickness: **4 – 7 mm**
Both are 3-component epoxy modified cementitious, self-smoothing screeds.
Topping: **Sikafloor®** resin to suit

Temporary Moisture Barrier on "Green" or Damp Concrete

- For cementitious floors with damaged or missing waterproof membrane
- No waiting time on "green" or damp concrete.
- No blisters in the finish when coating damp concrete



Concrete slab using on Sika concrete admixture technology
Primer: **SikaTop®-Armatec®-110 EpoCem®**
Screed: **Sikafloor®-83 EpoCem®**,
Layer thinkness: **> 8 mm**
use as a moisture barrier for subsequent **Sikafloor®** toppings

* Notice:
1) The 3D graphics in this brochure are all symbolic and don't reflect the real sizes and the real proportion of the build-ups.
2) The project related performance requirements such as ⊗ are all listed on page 44 to 46

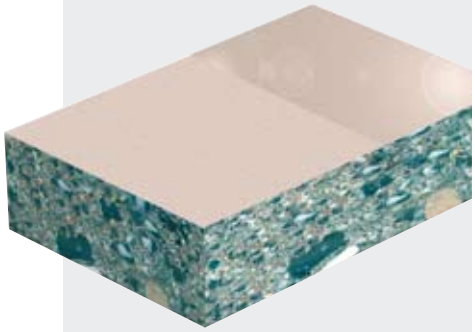
Requirements

Design / Build-up

Sika System / Performance

Monolithic Finish for Concrete

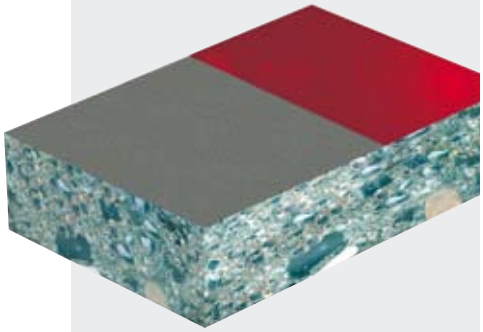
- Economic hardener
- Good abrasion
- Good impact resistance
- Colours available



Monolithic concrete slab using **Sikament®** or **Sika® ViscoCrete® SCC** technology. Dry shake floor hardener **Sikafloor®-3 QuartzTop** applied to the fresh concrete slab before the power float finish, surface cured and dustproofed with **Sikafloor®-Proseal W** or **Sikafloor®-Proseal -22**

Tough Monolithic Finish for Concrete

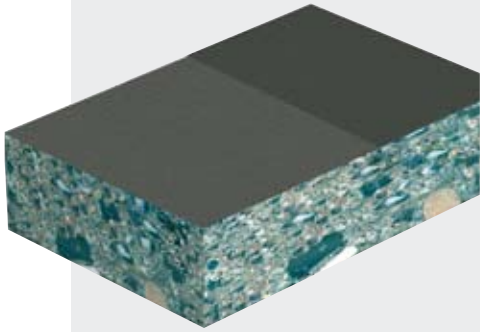
- Tough and durable
- Very good abrasion resistance
- Very good impact resistance



Monolithic concrete slab using **Sikament®** or **Sika® ViscoCrete® SCC** technology. Dry shake floor hardener **Sikafloor®-2 SynTop** applied to the fresh concrete slab before the power float finish, surface cured and dustproofed with **Sikafloor®-Proseal W** or **Sikafloor®-Proseal -22**

Heavy Duty Monolithic Finish for Concrete

- Excellent abrasion resistance
- Excellent impact resistance
- Extreme durability
- Conductive properties



Monolithic concrete slab using **Sikament®** or **Sika® ViscoCrete® SCC** technology. Dry shake floor hardener **Sikafloor®-1 MetalTop** applied to the fresh concrete slab before the power float finish, surface cured and dustproofed with **Sikafloor®-Proseal -22**

Sikafloor® Solutions for Storage, Logistic and Sales Areas

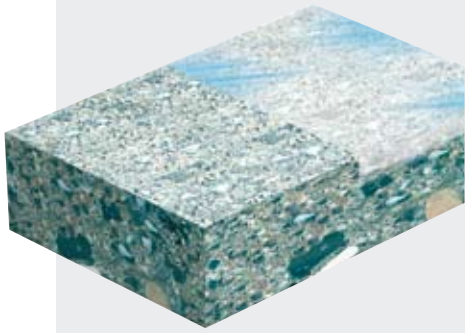
Requirements

Design / Build-up

Sika System / Performance

Surface Hardener for Concrete

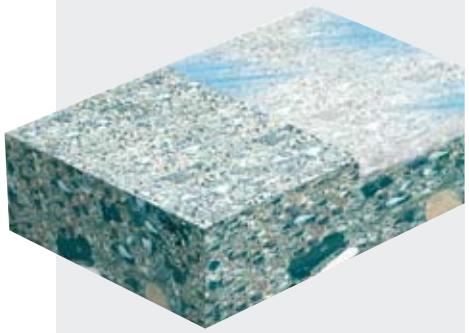
- Economic surface hardening
- Good abrasion resistance
- Prevent concrete dusting



1 – 2 x **Sikafloor®-CureHard-24**
A sodium silicate based liquid hardener sprayed and brushed into the substrate

Concrete Curing and Sealing, Water Based

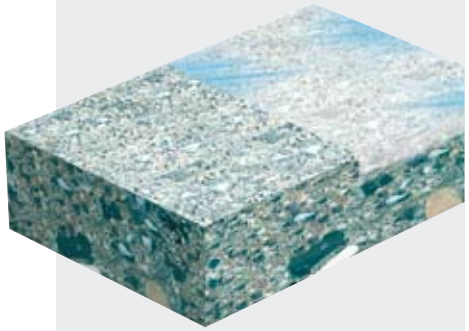
- Curing to ASTM C-309
- Prevent dusting
- Seal concrete surface
- Very low VOC



Sikafloor®-Proseal W
A one part, water based acrylic emulsion

Concrete Curing and Sealing, Solvent Based

- Curing to ASTM C-309
- Sealing and hardening
- Fast film formation



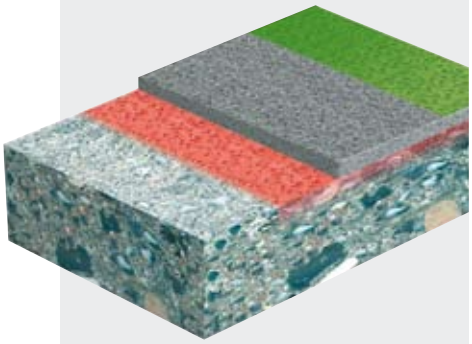
Sikafloor®-Proseal-22
A one part, transparent, solvent based acrylic resin polymer solution

Requirements

Cementitious Self-Smoothing Screed for 5 – 25 mm (Vapour Permeable)

- Smooth, level surface
- Rapid drying
- Vapour permeable
- Thin to medium layer thickness

Design / Build-up

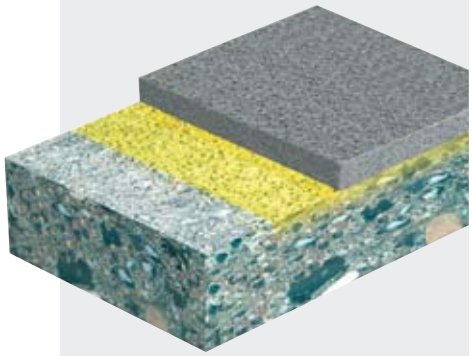


Sika System / Performance

Primer: **Sikafloor®-155 WN**
Broadcast with quartz sand
Screed: **Sikafloor®-Level-25**
A one-component, polymer modified cementitious screed
Sealer: **Sikafloor®-2530W**
A water based, vapour permeable coating

Cementitious Self-Smoothing Screed for 5 – 25 mm

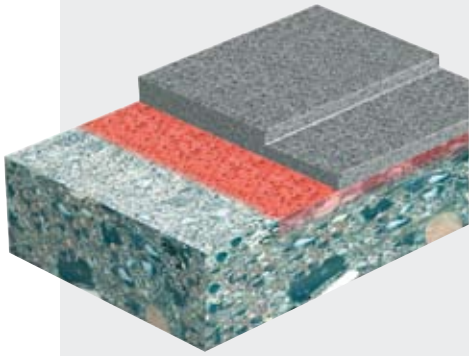
- Smooth, level surface
- Rapid drying
- Thin to Medium layer thickness



Primer: **Sikafloor®-156/-161**
Broadcast with quartz sand
Screed: **Sikafloor®-Level-25**
A one-component, polymer modified cementitious screed
Topping: **Sikafloor®** resin to suit

Temporary Moisture Barrier on Self-Smoothing "Green" or Damp Concrete

- For cementitious floors with damaged or missing water-proofing membrane
- No waiting time on "green" or damp concrete
- No blisters in the finish when coating damp concrete



Primer: **Sikafloor®-155 WN**
Screed: **Sikafloor®-81 EpoCem®**
Layer thickness: **2 – 3 mm**
or **Sikafloor®-82 EpoCem®**
Layer thickness: **4 – 7 mm**
Both are 3-component epoxy modified cementitious, self-smoothing screeds.
Topping: **Sikafloor®** resin to suit

Sikafloor® Solutions for Storage, Logistic and Sales Areas

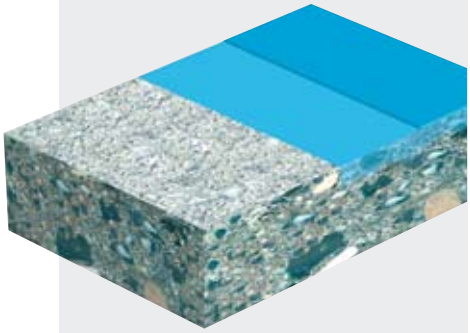
Requirements

Design / Build-up

Sika System / Performance

Water Dispersed, Coloured Roller Coating

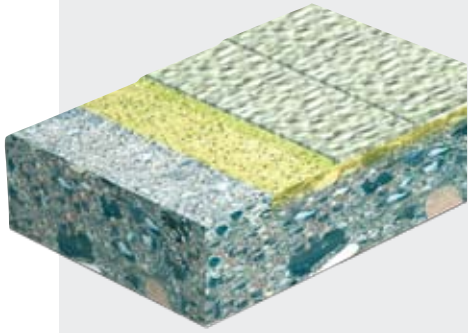
- Light to medium wear resistance
- Surface stabilization
- Prevent concrete dusting
- Coloured



2 x **Sikafloor®-2530 W**
A two part, water dispersed, coloured, epoxy resin based coating.
Total layer thickness: **0.15 – 0.25 mm**

Textured, Coloured Rigid Coating

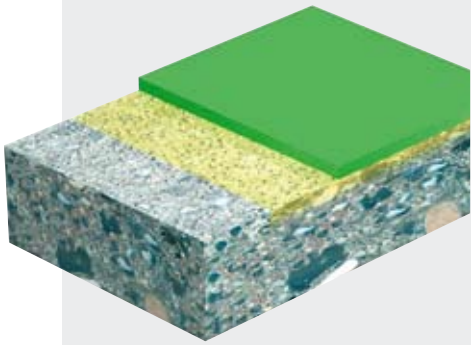
- Good wear and abrasion resistance
- Good chemical resistance
- Slip resistance
- Easy cleaning
- Coloured



Primer: **Sikafloor®-156/-161**
Coating: **Sikafloor®-264 Thixo**
A two part, total solid, coloured, epoxy binder for textured coating systems.
Total layer thickness: **0.6 – 0.8 mm**

Smooth Coloured Rigid Screed

- High wear and abrasion resistance
- Good impact resistance
- Good chemical resistance
- Medium thermal resistance
- Easy cleaning
- Coloured



Primer: **Sikafloor®-156/-161**
Wearing course:
Sikafloor®-263 SL
A two part, coloured epoxy binder for self-smoothing screed systems.
Total layer thickness: **2 – 3 mm**

Requirements

Cold Storage (> -10 °C)
Broadcast Coloured ECC Screed

- Medium wear resistance
- Medium thermal shock resistance
- Slip resistance
- Coloured

Cold Storage (> -10 °C)
Broadcast Coloured Rigid Screed

- High wear resistance
- Good chemical resistance
- Medium thermal shock resistance
- Slip resistance
- Coloured

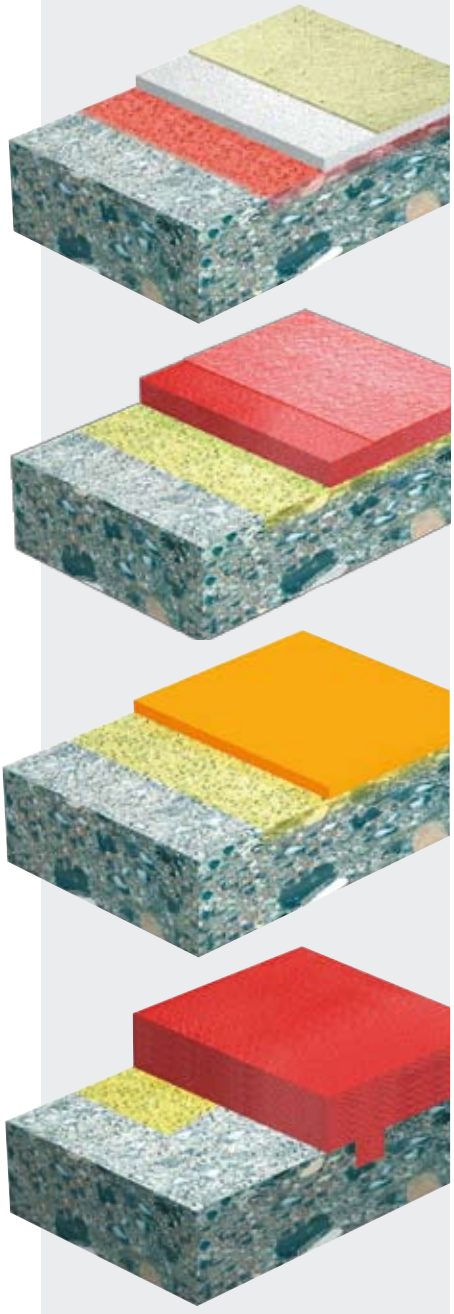
Frosting / Blast Freezing (> -20 °C)
Smooth Tough Elastic Screed

- High wear resistance
- Thermal shock resistance
- Easy cleaning
- Coloured

High Frost Resistant / Blast Freezing (> -40 °C)
Heavy Duty Resistant Screed

- High wear resistance
- Thermal shock resistance
- Easy cleaning
- Coloured
- Slip resistant

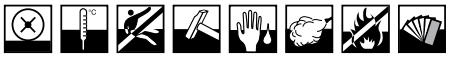
Design / Build-up



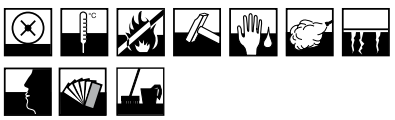
Sika System / Performance

Primer: **Sikafloor®-155 WN**
Base coat: **Sikafloor®-81 EpoCem®**
Broadcast with quartz sand
Seal coat **Sikafloor®-264**
Total layer thickness: **2 – 4 mm**

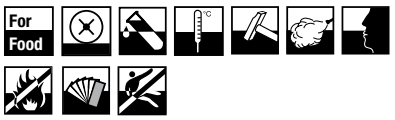
Primer: **Sikafloor®-156/-161**
Base coat: **Sikafloor®-263 SL**
A two part, total solid, coloured, epoxy binder for broadcast systems. Broadcast with quarz sand.
Seal coat **Sikafloor®-264**
Total layer thickness: **2 – 4 mm**



Primer: **Sikafloor®-156/-161**
Wearing course: **Sikafloor®-325**
A total solid coloured polyurethane binder for elasto-plastic thermal shock absorbing, self smoothening screeds.
Total layer thickness: **2 – 3 mm**



Primer: generally not requried. If necessary use **Sikafloor® -156/-161** fully broadcast with quartz sand.
Wearing course: **Sikafloor®-20 N PurCem®**
Easy trowel grade, heavy duty, 3-4 part modified PU screed.
Total layer thickness: **6 – 9 mm**



Sikafloor® Solutions for Production and Processing Areas

Introduction

The biggest challenges for flooring systems in manufacturing facilities are generally the production areas. The floor not only has to withstand severe exposure, including mechanical, chemical and thermal stresses, but also needs to provide the right degree of slip resistance to meet health and safety requirements.
The **Sikafloor®** Systems applied in production areas are based predominantly on Cement, Epoxy and Polyurethane resin technologies. For special requirements, different binder and filler systems are combined to achieve specific properties, e.g. Polyurethane and Cement in the **Sikafloor® PurCem®** range for high temperature and chemical resistance in wet environments.
References from over 30 years experience, makes Sika the most professional flooring system supplier for production areas.

For Dry and Wet Areas

Most production areas can be divided into ‘dry’ or ‘wet’ processing areas. Flooring systems in ‘wet’ process areas generally require a higher degree of slip-resistance, which must also be easily cleaned, and yet be resistant to the water and chemical exposure. Particularly in the production of quality foodstuffs, a clean floor in the working environment is of crucial importance.
‘Dry’ processing areas also often require a balance between cleanability and slip resistance to meet the requirements for hygiene, plus health and safety.

Extreme Exposure (Combinations of Wet Conditions, Chemicals, Temperatures and Abrasion)

Sika has a complete range of flooring solutions for industrial applications that require durability under extreme exposure conditions of use. These conditions can vary from severe chemical attack and thermal exposure in the food industry, to high point loading and abrasion in the automotive industry.
The **Sikafloor**® **PurCem**® range will perform under the most demanding service environments and meet all of these individual requirements with its flexible design possibilities. This includes a full range of non-slip / anti-skid profiles.

Minimum Down Time for Production

Each day of downtime in production is very expensive in both new facilities and in refurbishment. It is essential to finish all of the construction work within the shortest possible time. Using the fast curing **Sikafloor**® **Pronto** systems for maintenance and refurbishment projects can reduce the down time to a minimum. Systems can be designed to withstand extreme conditions with various degrees of slip-resistance and with surface finishes that will be easy to clean.

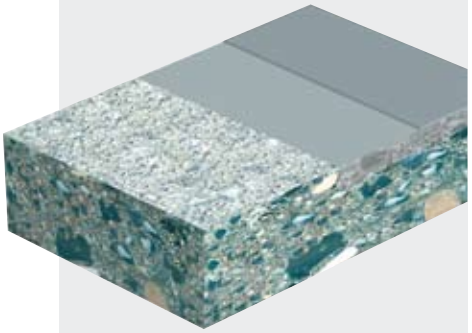
Production and Processing Areas
Dry Areas

Requirements

Coloured Roller Coating

- Good wear and abrasion resistance
- Good chemical resistance
- Easy cleaning
- Coloured

Design / Build-up

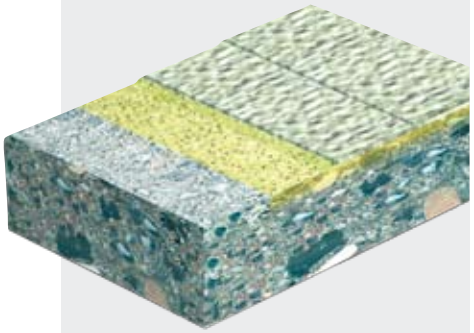


Sika System / Performance

2 x **Sikafloor®-264**
A total solid, economic, coloured high build coating based on epoxy resin.
Total layer thickness: **0.6 – 0.8 mm**

Textured, Coloured Rigid Coating

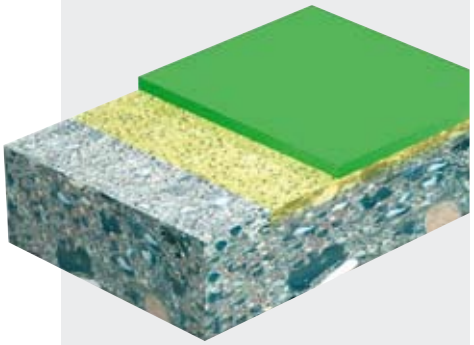
- Good wear and abrasion resistance
- Good chemical resistance
- Slip resistance
- Easy cleaning
- Coloured



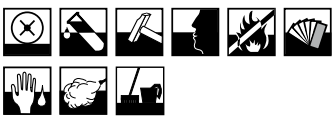
Primer: **Sikafloor®-156/-161**
Coating: **Sikafloor®-264 Thixo**
A two part, total solid, coloured, epoxy binder for textured coating systems.
Total layer thickness: **0.6 – 0.8 mm**

Smooth Coloured Rigid Screed

- High wear and abrasion resistance
- Good impact resistance
- Good chemical resistance
- Medium thermal resistance
- Easy cleaning
- Coloured

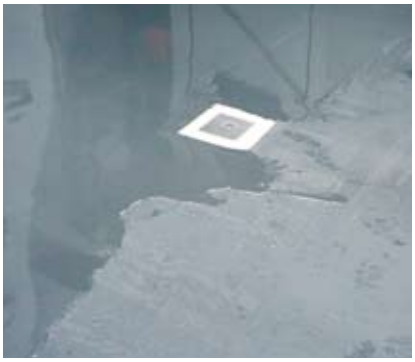


Primer: **Sikafloor®-161**
Wearing course:
Sikafloor®-263 SL
A two part, coloured epoxy binder for self-smoothing screed systems.
Total layer thickness: **2 – 3 mm**



* Notice:
1) The 3D graphics in this brochure are all symbolic and don't reflect the real sizes and the real proportion of the build-ups.
2) The project related performance requirements such as ⊗ are all listed on page 44 to 46

Production and Processing Areas
Wet Areas

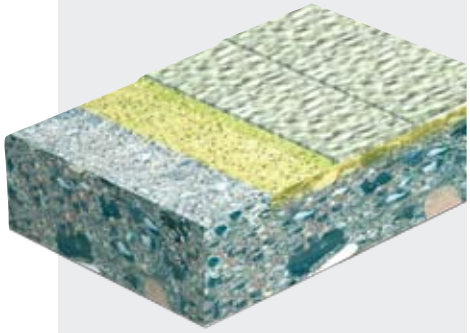


Requirements

Textured, Coloured Rigid Coating

- Good wear and abrasion resistance
- Good chemical resistance
- Slip resistance
- Easy cleaning
- Coloured

Design / Build-up

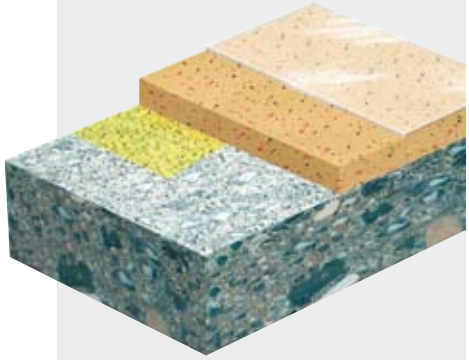


Sika System / Performance

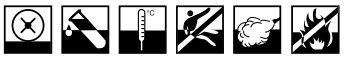
Primer: **Sikafloor®-156/-161**
Coating: **Sikafloor®-264 Thixo**
A two part, total solid, coloured, epoxy binder for textured coating systems.
Total layer thickness: **0.6 – 0.8 mm**

Broadcast Decorative Screed

- High wear resistance
- Medium thermal shock resistance
- Slip resistance
- Coloured

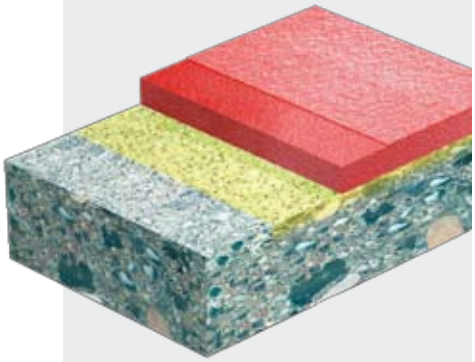


Primer: **Sikafloor®-156/-161**
Base coat: **Sikafloor®-263 SL**
A two part, total solid, coloured epoxy binder for self-smoothing screed systems.
Broadcast with coloured quartz sand.
Seal coat: **Sikafloor®-162 N**, a total solid transparent epoxy resin
Total layer thickness: **1.5 – 3 mm**



Broadcast Coloured Rigid Screed

- High wear resistance
- Good chemical resistance
- Medium thermal shock resistance
- Slip resistance
- Coloured



Primer: **Sikafloor®-156/-161**
Base coat: **Sikafloor®-263 SL**
A two part, total solid, coloured, epoxy binder for self-smoothing screed systems.
Broadcast with quartz sand.
Seal coat: **Sikafloor®-264**.
Total layer thickness: **2 – 4 mm**

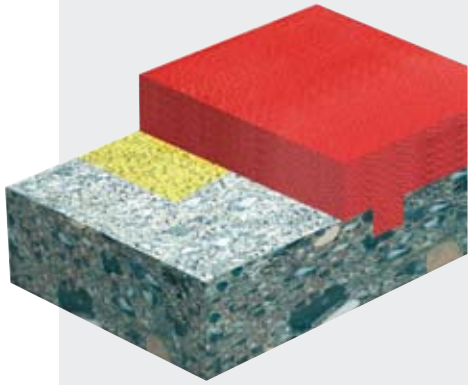
Production and Processing Areas
Extreme Exposure (Combinations of Wet Conditions, Chemicals, Temperatures and Abrasion)

Requirements

Heavy Duty Resistant Screed

- High wear resistance
- High chemical resistance
- High thermal shock resistance
- Slip resistance
- Odour-free
- Hygienic
- Coloured
- Easy cleaning (incl. steam)

Design / Build-up

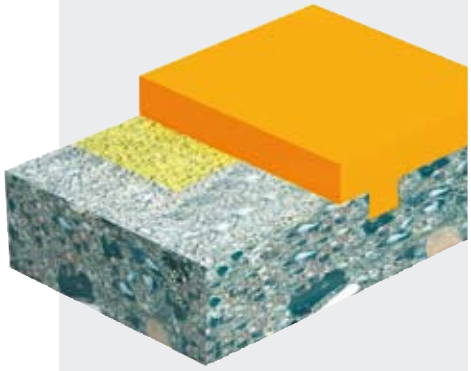


Sika System / Performance

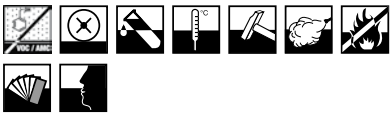
Primer: Generally not required. If necessary, use **Sikafloor®-156/-161** broadcast with quartz sand
Wearing course: **Sikafloor®-20 N PurCem®**
Easy trowel grade, heavy duty, 3-4 part modified PU screed.
Total layer thickness: **6 – 9 mm**

Medium Duty Resistant Screed

- High wear resistance
- High chemical resistance
- Medium thermal shock resistance
- Slip resistance
- Odour-free
- Hygienic
- Easy cleaning
- Coloured

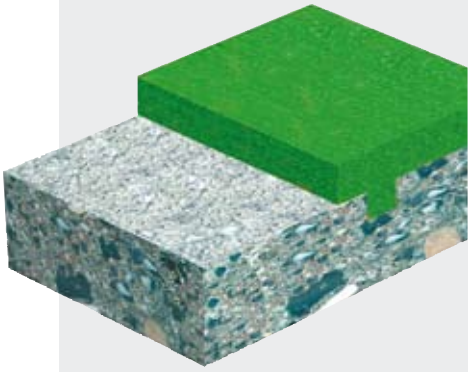


Primer: Scratch coat of **Sikafloor®-21 N PurCem® or Sikafloor®-156/161**
Wearing course: **Sikafloor®-21 N PurCem®**
Self levelling, heavy duty, 3-4 part modified PU screed
Total layer thickness: **4.5 – 6 mm**

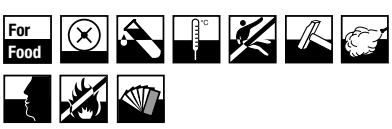


Broadcast Medium Duty Resistant Screed

- High wear resistance
- High chemical resistance
- Enhanced slip resistance
- Medium thermal shock resistance
- Hygienic
- Coloured



Primer: generally not required
Base coat: **Sikafloor®-22 N PurCem®**
A 3 – 4 part water based, enhanced slip resistant, self-smoothing, polyurethane heavy duty screed. Broadcast with coloured or natural quartz sand.
Seal coat: optional 1 – 2 x **Sikafloor®-31 N PurCem®**
Total layer thickness: **4.5 – 6 mm**



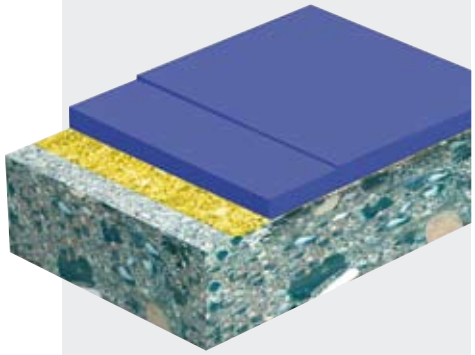
Production and Processing Areas
Minimum Down Time for Production

Requirements

Broadcast Fast Curing Screed

- High wear resistance
- Medium chemical resistance
- Rapid curing
- Slip resistance

Design / Build-up

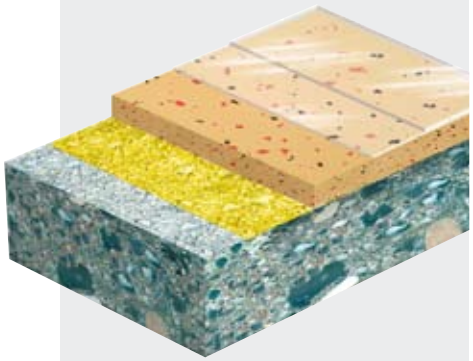


Sika System / Performance

Primer: **Sikafloor®-10/-13 Pronto**
Base coat: **Sikafloor®-14 Pronto**
A three part binder for broadcast systems based on reactive acrylic resins. Broadcast with coloured or natural quarz sand.
Seal coat: **Sikafloor®-16 Pronto**
(optional: **Sikafloor®-Pronto** Pigments).
Total layer thickness: approx. **2 – 4 mm**

Smooth Fast Curing Decorative Screed

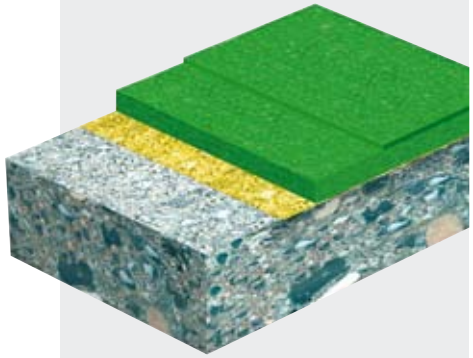
- Medium wear resistance
- Medium chemical resistance
- Rapid curing
- Decorative



Primer: **Sikafloor®-10/-13 Pronto**
Base coat: **Sikafloor®-14 Pronto**
A three part binder for self-smoothing systems based on reactive acrylic resins. Broadcast to excess with coloured flakes.
Seal coat: **Sikafloor®-16 Pronto**.
Total layer thickness: **2 – 4 mm**

Broadcast Fast Curing Elastomeric Screed

- Medium wear resistance
- Medium chemical resistance
- Thermal shock resistance
- Rapid curing
- Slip resistance
- Decorative



Primer: **Sikafloor®-10/-13 Pronto**
Base coat: **Sikafloor®-15 Pronto**
An elastomeric three part binder for broadcast systems based on reactive acrylic resins. Broadcast with coloured or natural quarz sand.
Seal coat: **Sikafloor®-17 Pronto**
(optional: **Sikafloor®-Pronto** Pigments).
Total layer thickness: **2 – 4 mm**

Sikafloor® and Sikagard® for Cleanroom Areas

Introduction

In recent years Sika has developed advanced new flooring and wall coating solutions for cleanroom environments. Manufacturing under cleanroom conditions, is increasingly becoming more widespread and demanding, with regards not only to VOC / AMC emissions (Volatile Organic Compounds / Airborne Molecular Contaminants), but also to particle emissions. The number of products which have to be produced and processed under cleanroom conditions is constantly growing, from electronics and automotive to food, pharmaceuticals and cosmetics. In many of these industries, cleanroom manufacturing plus a high degree of component cleanliness are now essential to achieve their desired product quality.
The **Sikafloor®-CR** and **Sikagard®-CR** ranges are the 'State of the Art' in products specifically developed for floor, wall and ceiling coatings in cleanroom environments.

Application Related Advantages

- Easy to apply with no restrictions compared to a standard epoxy application
- Flexibility in the system build up to serve individual requirements
- Very low odour

Performance Related Advantages

Sikafloor® and **Sikagard®** cleanroom suitable products have been tested to particle emissions, so that the different material pairings can be classified into cleanliness classes in accordance with the international standard ISO 14644-part 1.
Furthermore, **Sikafloor®** and **Sikagard®** cleanroom suitable products have been specially designed and tested to meet the stringent outgassing requirements for cleanroom environments in accordance with the international standard ISO 14644-part 8.

Individual Design Opportunities

Sikafloor® and **Sikagard®** are suitable for:

- All clean manufacturing facilities with a controlled level of contamination, such as minimum particle and VOC/AMC emissions
- All manufacturing facilities where cleanroom product performance is demanded to ensure high standards of cleanliness, including those for semi-conductors, optical goods, electronics, foodstuffs, pharmaceuticals and in the automotive industry and hospitals.

Industrial Alliance Cleanroom Suitable Materials – CSM

The Fraunhofer IPA founded the Industrial Alliance CSM and organises the main work topics and coordinates the required research including the recording and analysis of data. The aim of founding the industrial alliance "Cleanroom Suitable Materials" was to form a sound scientific basis for assessing the cleanroom suitability of materials and for determining material selection criteria for clean applications.

Cleanroom® Suitable Materials
Sika AG Industrial Alliance Membership

Test Bench "Material Inspec"

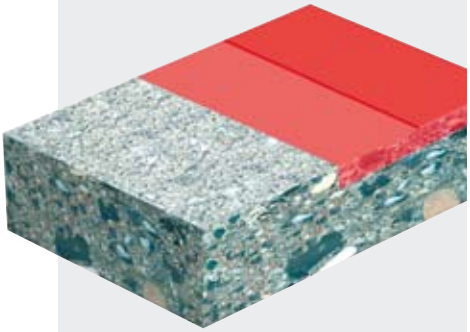
Fraunhofer Institut Produktionstechnik und Automatisierung

Requirements

Low VOC Roller Coating

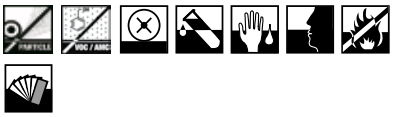
- Low VOC/AMC emissions
- Low particle emissions
- Medium wear resistance
- Medium chemical resistance
- Easy cleaning
- Coloured
- IPA certificate “Cleanroom Suitable Materials”

Design / Build-up



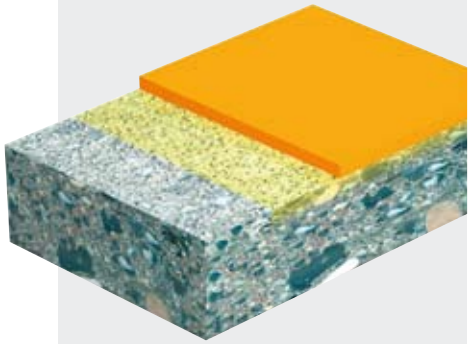
Sika System / Performance

2 x **Sikagard®-183 W CR**
A coloured water dispersed epoxy resin based coating for floors and walls.
Total layer thickness: **0.3 – 0.5 mm**

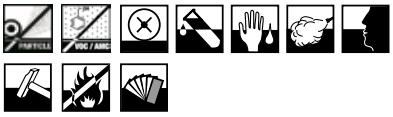


Smooth Low VOC Screed

- Low VOC/AMC emissions
- Low particle emissions
- High wear resistance
- Good chemical resistance
- Coloured
- IPA certificate “Cleanroom Suitable Materials”

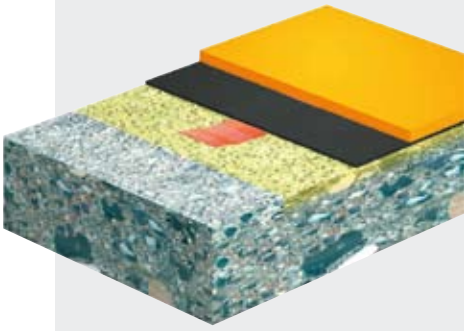


Primer: **Sikafloor®-144/-161**
Wearing course: **Sikafloor®-266 CR**
A two part, total solid, low-emisson, coloured, epoxy binder for self-smoothing screed systems.
Total layer thickness: **2 – 3 mm**

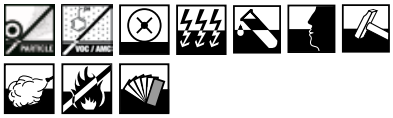


Smooth Low VOC Conductive Screed

- Low VOC/AMC emissions
- Low particle emissions
- Conductive
- High wear resistance
- Good chemical resistance
- Coloured
- IPA certificate “Cleanroom Suitable Materials”



Primer: **Sikafloor®-144/-161**
Conductive layer:
Sikafloor®-220 W Conductive
Wearing course:
Sikafloor®-266 ECF CR
A two part, total solid, electrostatic conductive, low emission, coloured, epoxy binder for self-smoothing screed systems.
Total layer thickness: ca. **2 mm**



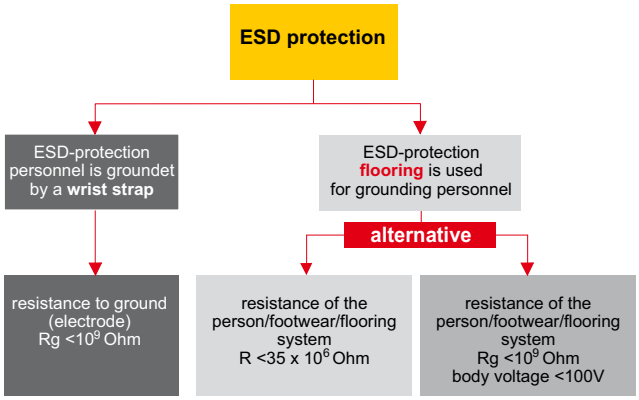
* Notice:
1) The 3D graphics in this brochure are all symbolic and don’t reflect the real sizes and the real proportion of the build-ups.
2) The project related performance requirements such as ⊗ are all listed on page 44 to 46

Sikafloor® Solutions for ESD- and Conductive Requirements

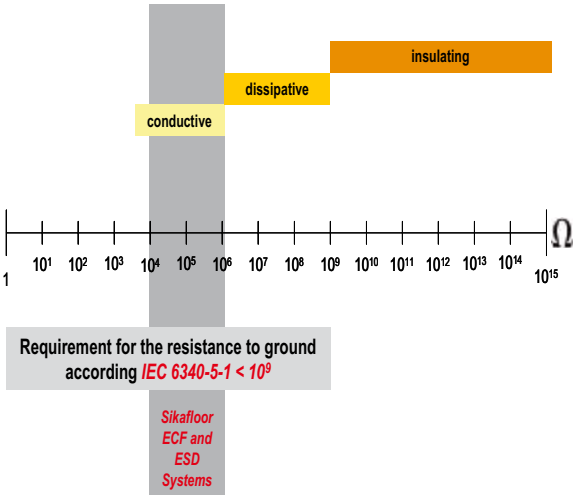
Introduction

In industries where electronic components or volatile chemicals are involved, static electricity can result in significant damage, injury and financial loss. All active electronic components and equipment e.g. micro-chips, integrated circuits and machinery are sensitive to electrostatic discharges (also known as ESD events). Even when areas and people are equipped to handle such static-sensitive devices, inadvertent contact and damage can occur. **Sikafloor® ESD** (Electro Static Discharge) 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.

Resistant Ranges According to IEC 61340-5-1



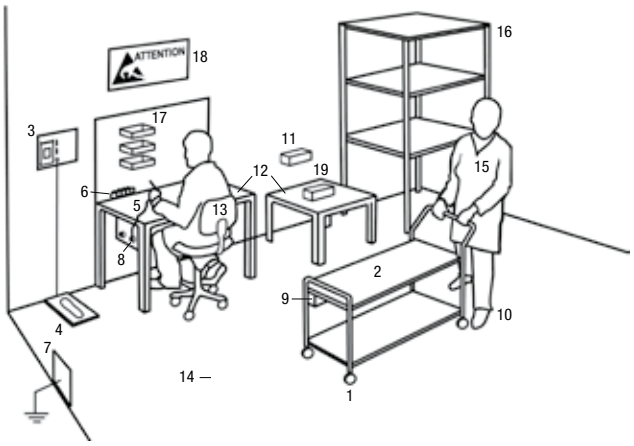
Application Range and Requirements



What Does an ESD Event Do?

An ESD event is an Electro Static Discharge, which is basically a spark (a micro lightning bolt in effect), which passes from one charged conductive surface to another. This incredibly rapid transfer of what had previously been a static (non-moving) charge can cause fires, explosions, create heat, light and even sounds. It is this potentially unseen, unfelt or unheard 'micro lightning' or spark without warning that must be prevented or controlled.

Example of an EPA: Electrostatic Protected Area



1. Groundable wheels
2. Groundable surface
3. Wrist band and foot wear tester
4. Footwear footplate
5. Wrist band and grounding cord
6. Grounding cord
7. Ground
8. Earth bounding point (EBP)
9. Groundable point of trolley
10. Toe and heel strap (footwear)
11. Ionizer
12. Dissipative surfaces
13. Seating with groundable feet's and pads
14. **Sikafloor®** ESD or Conductive Solution
15. Garments
16. Shelving with grounded surfaces
17. Groundable racking
18. EPA sign
19. Machine

	IEC 61340-5-1	ANSI/ESD S 20.20-2007	ASTM F 150*	BetrSichV BGR 132 (ZH/200)	BS 2050
Sikafloor® 262 AS Thixo	✓	✓	✓	✓	
Sikafloor® 262 AS	✓	✓	✓	✓	
Sikafloor® 235 ESD	✓	✓	✓	✓	
Sikafloor® 381 AS	✓	✓	✓	✓	
Sikafloor® 390 AS	✓	✓	✓	✓	
Sikafloor®-1 Metaltop					✓

Specification

No specific conductivity or electrical resistance values mentioned in any of the international or national standards in the table shown above are mandatory. The values can be adapted to meet the local requirements by the responsible authorities.
Before applying an ESD or conductive flooring system, Sika always recommends a detailed assessment of at least the following parameters and then for the appropriate values to be agreed and accepted by all of the parties involved:

- Limits for the electrical resistance and body voltage generation
- Methods of Measurement
- Equipment to make these measurements
- Any applicable standards or specifications

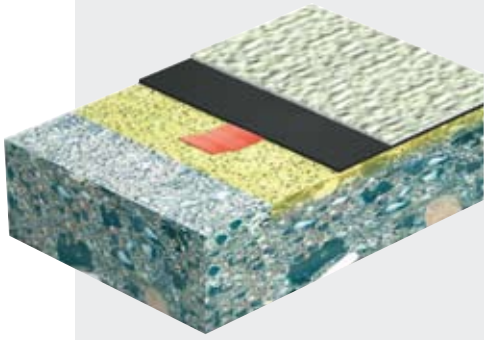
Areas with ESD or Conductive Requirements

Requirements

Textured Conductive Coating

- Good wear and abrasion resistance
- Good chemical resistance
- Slip resistance
- Easy cleaning

Design / Build-up

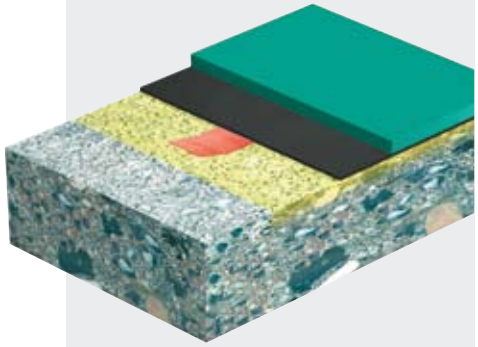


Sika System / Performance

Primer: **Sikafloor®-156/-161**
Conductive layer: **Sikafloor®-220 W Conductive**
Textured conductive coating:
Sikafloor®-262 AS N Thixo
A two part, total solid, electrostatic conductive, coloured, epoxy binder for textured coating systems.
Total layer thickness: **0.6 – 0.8 mm**

Smooth Conductive Screed

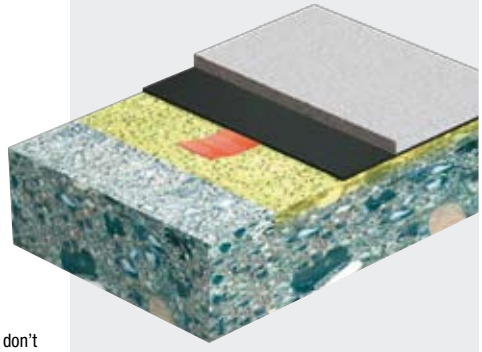
- High wear and abrasion resistance
- Good chemical resistance
- Coloured
- Easy cleaning



Primer: **Sikafloor®-156/-161**
Conductive layer: **Sikafloor®-220 W Conductive**
Wearing course: **Sikafloor®-262 AS N**
A two part, total solid, electrostatic conductive, coloured, epoxy binder for self-smoothing screed systems.
Total layer thickness: approx. **2 mm**

Smooth ESD Screed

- High wear and abrasion resistance
- Good chemical resistance
- Coloured
- Easy cleaning



Primer: **Sikafloor®-156/-161**
Conductive layer: **Sikafloor®-220 W Conductive**
Wearing course: **Sikafloor®-235 ESD**
A two part, total solid, electrostatically dissipative, coloured, epoxy binder for self-smoothing screed systems.
Total layer thickness: approx. **2 mm**

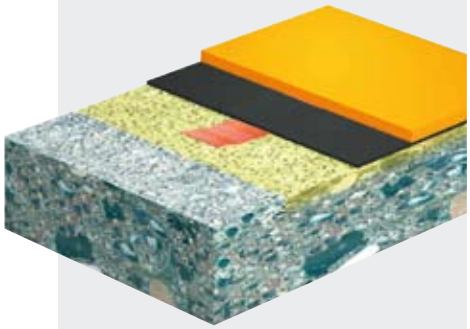
* Notice:
1) The 3D graphics in this brochure are all symbolic and don't reflect the real sizes and the real proportion of the build-ups.
2) The project related performance requirements such as ⊗ are all listed on page 44 to 46

Requirements

Smooth Chemical Resistant Conductive Screed

- High wear and abrasion resistance
- High chemical resistance
- Coloured
- Easy cleaning

Design / Build-up

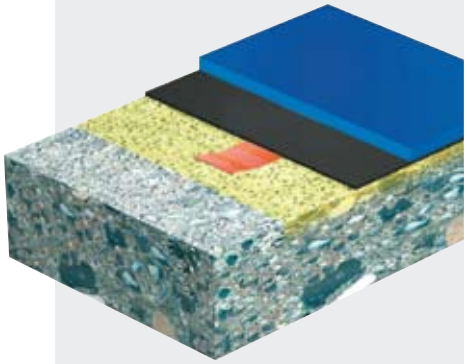


Sika System / Performance

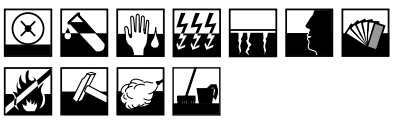
Primer: **Sikafloor®-156/-161**
Conductive layer: **Sikafloor®-220 W Conductive**
Wearing course: **Sikafloor®-381 AS**
A two part, total solid, highly chemical resistant, electrostatically conductive, coloured, epoxy binder for self-smoothing screed systems.
Total layer thickness: approx. **2 mm**

Smooth Flexible Chemical Resistant Conductive Screed

- High wear and abrasion resistance
- High chemical resistance
- Crack-bridging
- Coloured
- Easy cleaning

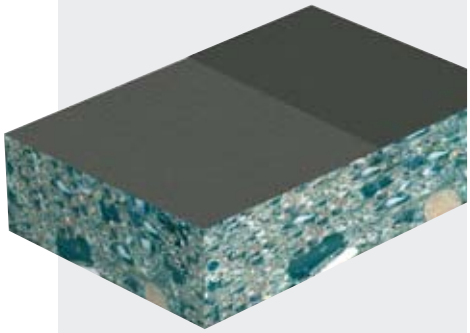


Primer: **Sikafloor®-156/-161**
Conductive layer: **Sikafloor®-220 W Conductive**
Wearing course: **Sikafloor®-390 AS**
A two part, total solid, highly chemical resistant, electrostatically conductive, crack-bridging, coloured, epoxy binder for self-smoothing screed systems.
Total layer thickness: approx. **2 mm**



Heavy Duty Monolithic Finish for Concrete

- Excellent abrasion resistance
- Excellent impact resistance
- Extreme durability
- Conductive properties



Monolithic concrete slab using **Sikament®** or **Sika® ViscoCrete® SCC** technology. Dry shake floor hardener **Sikafloor®-1 MetalTop** applied to the fresh concrete slab before the power-float finish, surface cured and sealed with **Sikafloor®-Proseal-22**

Sikafloor® Solutions for Multi-Storey and Underground Car Park

Parking Structures Today

Parking has become a vital part of today's mobile community, especially in metropolitan areas including airports, all of which are growing at an ever faster rate. This means continually providing more parking spaces by building new car parks and frequently extending and refurbishing existing ones.

Where Do You Like to Park?

Successful parking structures are designed to meet the users demands, which vary from feeling safe and welcome to knowing that their cars are in a secure environment. Given the choice, people always park in light a bright car park where they feel their property is being looked after and safe.

Investigation and Survey of Existing Parking Structures

Multi-storey and underground car parks are both subject to many different stresses. In order to discover the root causes of distress and deterioration, it is therefore essential to carry out a professional Condition Survey and assessment. It is obviously important to balance the cost of the investigative work with the benefits that the information derived will provide; but an appropriate survey and assessment is often key to the process of successfully maintaining and extending the service life of a parking structure.

New Build

Modern parking structures are essential and integrated into a Cities' architecture. They are frequently built using 'fast-track' construction techniques, with as much off-site construction as possible, to reduce the disruption in these areas.
Therefore precast and prefabricated sections of steel frames and concrete decks and stairways are usually combined in composite structures for new car parks.
The adequate protection of new build car parks will prevent a cost intensive refurbishment in the future.

Refurbishment

Most of Europe's existing multi-storey car parks have been built since 1940 and they are predominantly of reinforced concrete construction, many also have a history of early deterioration, structural defects and shortcomings in safety. This is due to poor design, poor construction, low standards of maintenance and repair, or a combination of all three. The exposure is more similar to that of bridges and as a result, deterioration, particularly reinforcement corrosion due to the effects of de-icing salts, has had a major impact on their durability. The closure of many areas and even whole car parks for costly repair or replacement has been necessary. These bad experiences have served to emphasis the need for improved performance in design, workmanship and the materials selection, to ensure the performance and safety of new and existing car parking structures.

Multi-Storey and Underground Car Parks
Ground Bearing Slabs

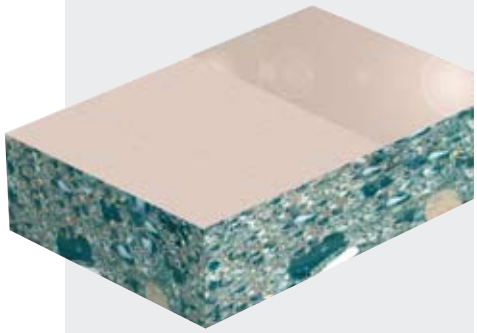
Requirements

Design / Build-up

Sika System / Performance

Monolithic Finish for Concrete

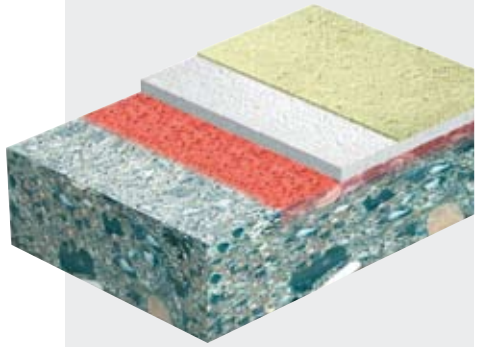
- Economical hardener
- Good abrasion resistance
- Good impact resistance
- Colours available



Monolithic concrete slab using **Sikament®** or **Sika® ViscoCrete® SCC** Technology. Dry shake floor hardener **Sikafloor®-3 QuartzTop** applied to the fresh concrete slab before the power-float finish, surface cured and sealed with **Sikafloor®-Proseal W** or **Sikafloor®-Proseal-22**

Broadcast ECC Coloured Screed

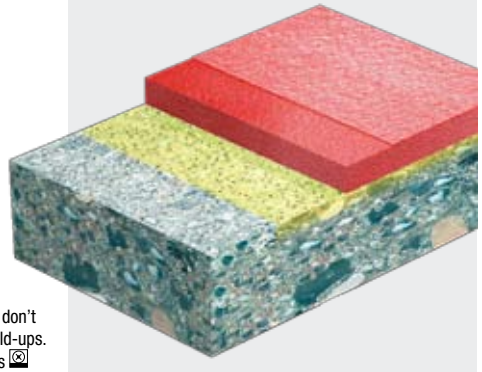
- Medium wear resistance
- Medium thermal shock resistance
- Slip resistance
- Coloured



Primer: **Sikafloor®-155 WN**
Base coat: **Sikafloor®-81 EpoCem®**
Broadcast: quartz sand
Seal coat: **Sikafloor®-264**
Total layer thickness: **2 – 4 mm**

Broadcast Coloured Rigid Screed

- Highly abrasion resistant
- Coloured
- Waterproof
- Impact resistance
- Meets German Standard (OS 8)



Primer: **Sikafloor®-161**
Base coat: **Sikafloor®-263 SL**
Broadcast: quartz sand
Seal coat **Sikafloor®-264**
A total solid, coloured, protective water-proofing and wearing surface for car park decks.
Total system thickness: ca. **1 – 3 mm**

* Notice:
1) The 3D graphics in this brochure are all symbolic and don't reflect the real sizes and the real proportion of the build-ups.
2) The project related performance requirements such as ⊗ are all listed on page 44 to 46

Multi-Storey and Underground Car Parks
Intermediate Decks

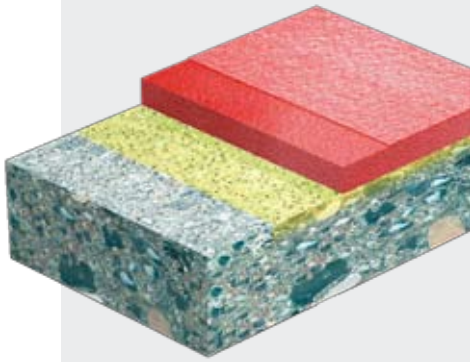
Requirements

Design / Build-up

Sika System / Performance

Broadcast Coloured Rigid Screed

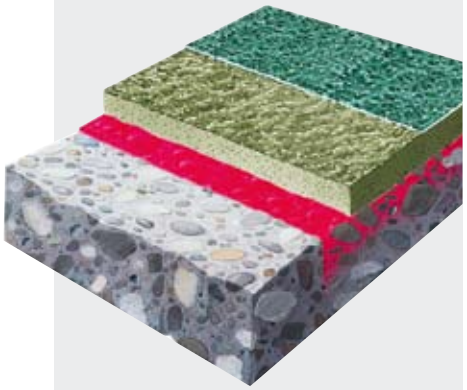
- Highly abrasion resistance
- Coloured
- Waterproof
- Impact resistance
- Meets German Standard (OS 8)



Primer: **Sikafloor®-161** (optional)
Base coat: **Sikafloor®-263 SL**
Broadcast: Quartz sand
Seal coat: **Sikafloor®-264**
A total solid, coloured, protective waterproofing and wearing surface for car park decks.
Total system thickness: **1 – 3 mm**

Broadcast Coloured Flexible Screed

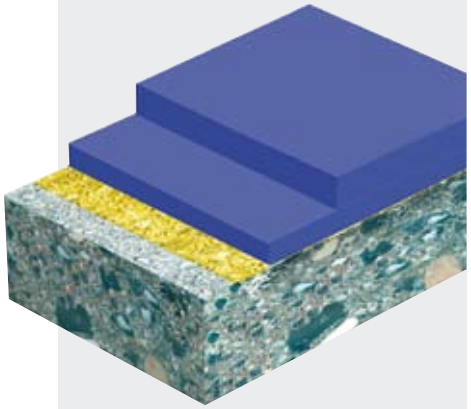
- Static crack-bridging properties up to -10 °C
- Coloured
- Waterproof
- Abrasion resistant



Primer: **Sikafloor®-156/-161**
Base coat: **Sikafloor®-355**
Broadcast: Quartz sand
Seal coat: **Sikafloor®-358/-359 N**
A total solid, coloured, elastomeric, protective waterproofing and wearing surface for car park decks.
Total system thickness: ca. **2 – 3 mm**

Broadcast Fast Curing Screed

- Abrasion resistant
- Coloured
- Waterproof
- Fast cure



Primer: **Sikafloor®-13 Pronto**
Base coat: **Sikafloor®-14 Pronto**
Broadcast: Quartz sand
Seal coat: **Sikafloor®-18 Pronto**
A total solid, coloured, fast curing, protective waterproofing and wearing surface for car park decks.
Total system thickness: ca. **3 – 4 mm**

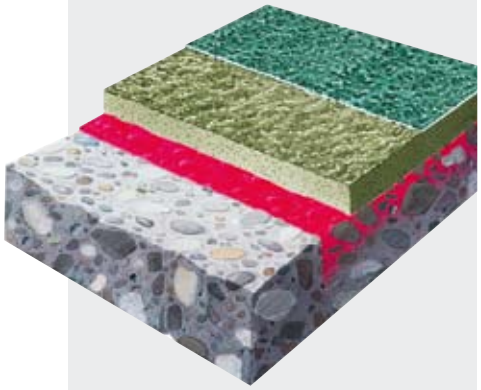
Multi-Storey and Underground Car Parks
Top Decks and Exposed Areas

Requirements

Broadcast Coloured Flexible Screed

- Static crack-bridging properties up to -10 °C
- Coloured
- Waterproof
- Abrasion resistant

Design / Build-up

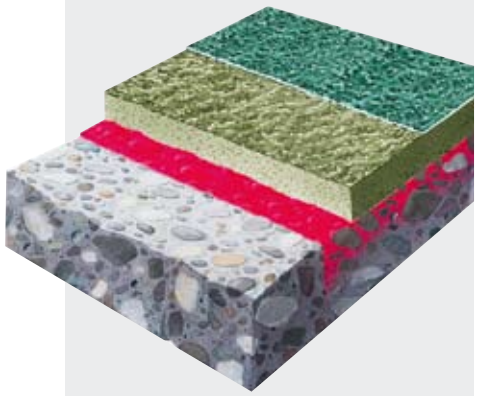


Sika System / Performance

Primer: **Sikafloor®-156/-161**
Base coat: **Sikafloor®-355**
Broadcast: Quartz sand
Seal coat: **Sikafloor®-358/-359 N**
A total solid, coloured, flexible, protective waterproofing and wearing surface for car park decks.
Total system thickness: ca. **2 – 3 mm**

Broadcast Crack-Bridging Coloured Screed

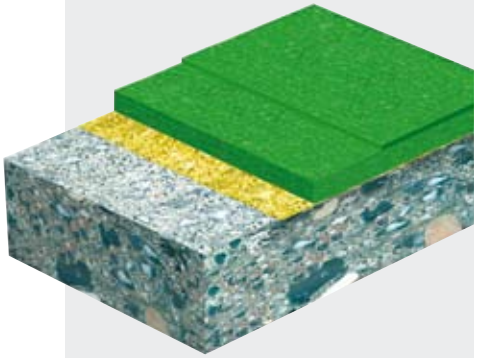
- Dynamic and static crack-bridging properties up to -20 °C
- Coloured
- Waterproof
- Abrasion resistant
- Meets German Standard (OS-11b)



Primer: **Sikafloor®-156/-161**
Wearing course: **Sikafloor®-350 N Elastic**
Broadcast: Quartz sand
Seal coat: **Sikafloor®-358/-359 N**
A total solid, elastomeric, protective waterproofing and wearing surface for car park decks.
Total system thickness: ca. **3 – 4 mm**

Broadcast Fast Curing Crack-Bridging Screed

- Crack-bridging properties
- Coloured
- Waterproof
- Abrasion resistant
- Fast cure



Primer: **Sikafloor®-10/-13 Pronto**
Base coat: **Sikafloor®-15 Pronto**
Broadcast: Quartz sand
Seal coat: **Sikafloor®-18 Pronto**
A total solid, coloured, fast curing, elastomeric, protective waterproofing and wearing surface for car park decks.
Total system thickness: ca. **2 – 4 mm**

Sikafloor® Solutions for Commercial and Public Buildings

Introduction

Sika has designed flooring solutions, especially for the use in schools, museums, retail, leisure, healthcare facilities and other commercial and public buildings.

This Sika flooring range combines individual design with comfort and care including the lowest VOC emissions in order to create a unique flooring experience.

Individual Design

The **Sika®-Decorative-Floor®** range meets the need for individual and decorative designs in commercial, retail and leisure facilities using coloured chips, aggregates or other special fillers. These floors allow you to create many different surface designs, ranging from broadcast to powerfloat finishes.

Sika®-ComfortFloor® solutions can be produced in a wide range of different colour shades, with special colours made to order. This allows you to create your own individual designs or extend your Corporate Identity onto your floors.

Comfort and Care

Sika®-ComfortFloor® solutions for commercial and public buildings areas are soft enough to provide comfort in those areas where personnel stand for long periods of time. These resilient flooring solutions not only reduce footfall noise and horizontal noise transmission, but also resist scratching by deformation and recovery.

Sika®-ComfortFloor® Solutions

- Low VOC emissions
- Noise absorbent
- Good impact sound insulation
- High comfort
- Good wear resistance
- Good impact resistance
- Crack-bridging
- Decorative

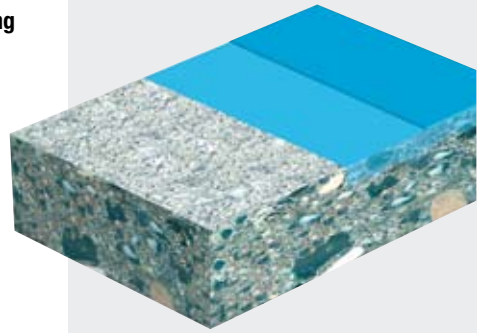
Commercial and Public Buildings
Decorative Flooring Systems

Requirements

Water Dispersed, Coloured Roller Coating

- Light to medium wear resistance
- Surface stabilization
- Prevent concrete dusting
- Coloured

Design / Build-up

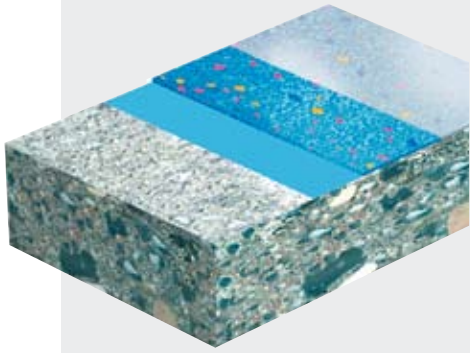


Sika System / Performance

2 x **Sikafloor®-2530 W**
A two part, water dispersed, coloured, epoxy resin based coating.
Total layer thickness: **0.15 – 0.25 mm**

Decorative Roller Coating

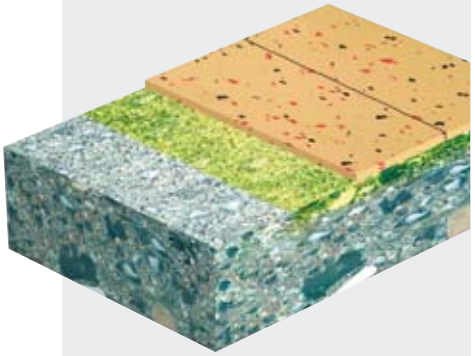
- Wear resistance
- Easy cleaning
- Decorative



2 x **Sikafloor®-264**
A two part, coloured, high build epoxy resin coating, sprinkled with coloured flakes.
Sealer **Sikafloor®-304 W**
A water dispersed polyurethane based matt sealer.
Total layer thickness: **0.6 – 0.8 mm**

Smooth Decorative Screed

- Good wear resistance
- Easy cleaning
- Decorative



Primer: **Sikafloor®-156/-161**
Base coat: **Sikafloor®-263 SL**
A two part, total solid, coloured, epoxy binder for self-smoothing screed systems, sprinkled with coloured flakes.
Sealer: **Sikafloor®-304 W**
A water dispersed polyurethane based, matt sealer.
Total layer thickness: **1 – 2 mm**

* Notice:
1) The 3D graphics in this brochure are all symbolic and don't reflect the real sizes and the real proportion of the build-ups.
2) The project related performance requirements such as ⊗ are all listed on page 44 to 46

Commercial and Public Buildings
Comfort Flooring Systems

Requirements

Smooth Low VOC Coloured Elastic Screed

- Low VOC emissions
- Good wear resistance
- Good impact resistance
- Crack-bridging
- Coloured

Smooth Low VOC Coloured Sound Insulating Screed

- Low VOC emissions
- Noise-absorbent
- Good impact sound insulation
- High comfort
- Good wear resistance
- Good impact resistance
- Crack bridging

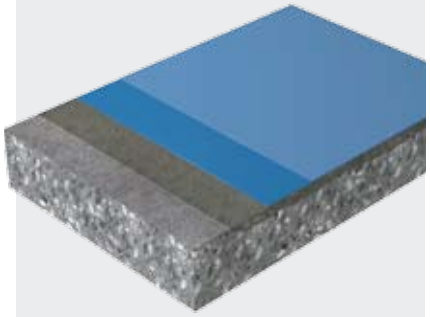
Smooth Low VOC Decorative Elastic Screed

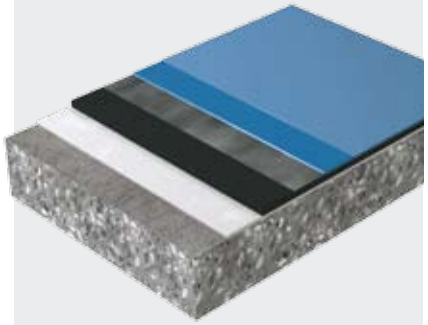
- Low VOC emissions
- Good wear resistance
- Good impact resistance
- Crack bridging
- Decorative

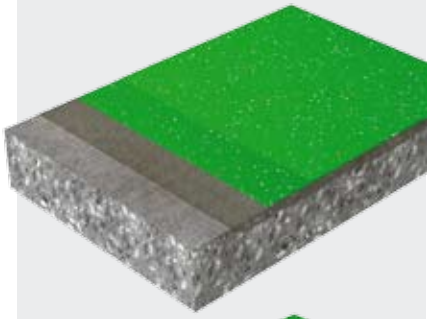
Smooth Low VOC Decorative Sound Insulating Screed

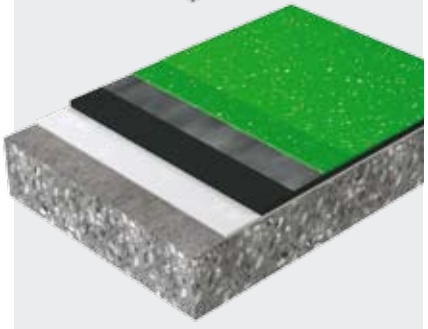
- Low VOC emissions
- Noise-absorbent
- Good impact sound insulation
- High comfort
- Good wear resistance
- Good impact resistance
- Crack bridging
- Decorative

Design / Build-up









Sika System / Performance

Sika®-ComfortFloor®
Primer: **Sikafloor®-144/-161**
Base coat: **Sikafloor®-330**
Sealer: **Sikafloor®-305 W**
Total system thickness: ca. **2 – 3 mm**

Sika®-ComfortFloor Pro®
Adhesive: **Sikafloor®-Comfort Adhesive**
Rubber mat: **Sikafloor®-Comfort Regupol -6015 H**
Pore filler: **Sikafloor®-Comfort Porefiller**
Base coat: **Sikafloor®-330**
Sealer: **Sikafloor®-305 W**
Total system thickness: ca. **6 – 8 mm**

Sika®-ComfortFloor Decorative®
Primer: **Sikafloor®-144/-161**
Base coat: **Sikafloor®-300 N**
Broadcast: Coloured flakes (optional)
Sealer: **Sikafloor®-304 W**
Total system thickness: ca. **2 – 3 mm**

Sika®-ComfortFloor Decorative Pro®
Adhesive: **Sikafloor®-Comfort Adhesive**
Rubber mat: **Sikafloor®-Decorative Regupol -4580**
Pore filler: **Sikafloor®-Comfort Porefiller**
Base coat: **Sikafloor®-300 N**
Broadcast: Coloured flakes (optional)
Sealer: **Sikafloor®-304 W**
Total system thickness: **6 – 8 mm**

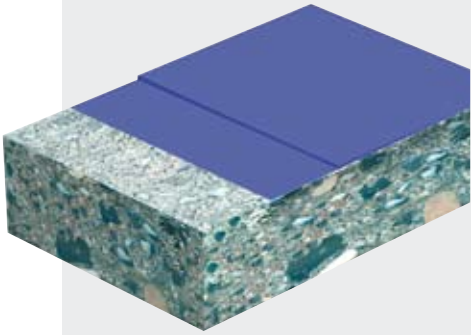
Commercial, Residential and Institutional Areas
Balconies and Stairways

Requirements

Smooth Decorative Weather Resistant Coating

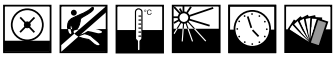
- Light wear resistance
- Crack-bridging
- UV-stability

Design / Build-up



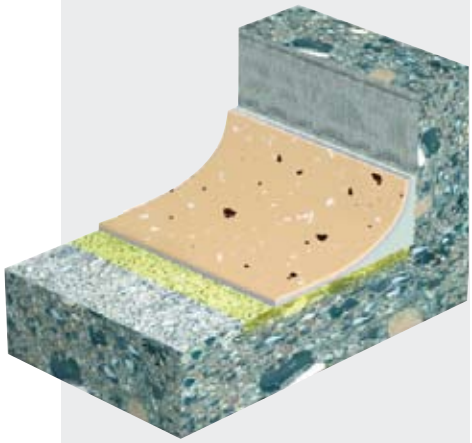
Sika System / Performance

Primer: **Sikafloor®-400 N Elastic**
+ 10% Thinner C
Coating: **Sikafloor®-400 N Elastic**
An one part, coloured, highly elastic, moisture curing polyurethane coating.
Total layer thickness: approx. **0.3 – 0.5 mm**



Smooth Crack-Bridging Decorative Screed

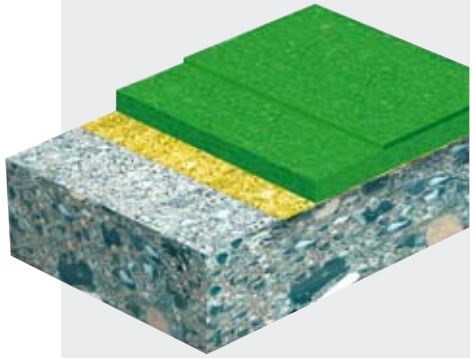
- Medium wear resistance
- Highly crack-bridging
- Decorative
- UV Light stability



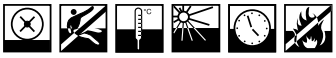
Primer: **Sikafloor®-156/-161**
Wearing course: **Sikafloor®-400 N Elastic**
A one part, coloured, highly elastic, moisture curing polyurethane resin for self-smoothing systems (optional: sprinkled with coloured flakes).
Sealer: **Sikafloor®-410**
A moisture curing polyurethane matt sealer.
Total layer thickness: approx. **1 – 2 mm**

Broadcast Fast Curing Crack-Bridging Screed

- Medium wear resistance
- Medium chemical resistance
- Crack-bridging
- Rapid curing
- Slip resistance
- Decorative



Primer: **Sikafloor®-10/-13 Pronto**
Base coat: **Sikafloor®-15 Pronto**
An elastomeric 3-part binder for broadcast systems based on reactive acrylic resins.
Broadcast with coloured quartz or natural quartz.
Seal coat: **Sikafloor®-18 Pronto**
(optional: **Sikafloor®-Pronto** Pigments).
Total layer thickness: approx. **2 – 4 mm**



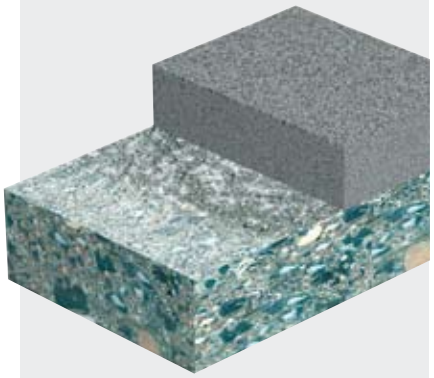
Commercial and Public Buildings
Cementitious Underlayment

Requirements

Underlayment / Levelling Screed

- Cementitious self levelling
- Quick hardening
- Fast application
- Easy to place
- Reduced shrinkage
- Good drying
- Good surface hardness

Design / Build-up

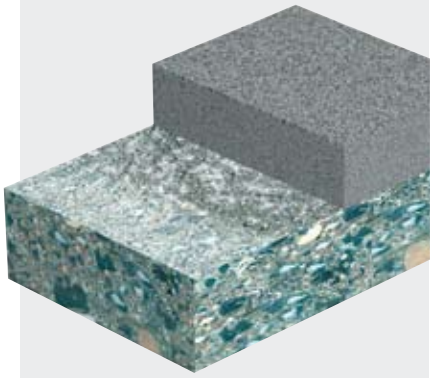


Sika System / Performance

Primer: None, Saturated surface dry **(SSD)**
or **Sika®-Level-01 Primer**
Base coat: **Sika® Level-100**
Top layer: wood floors, tiles, carpets, resilient sheets, polyurethane resin floors etc.
Total layer thickness: approx. **1 – 10 mm**

Cementitious Levelling Screed

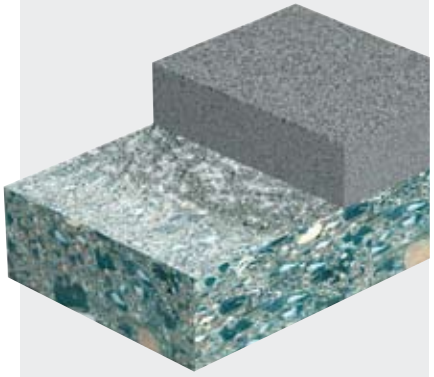
- Cementitious self levelling
- Fast application
- Smooth and pore free surface
- Easy to place
- Low shrinkage
- Fast setting and drying
- Good surface appearance and hardness
- Very low emissions – EC1



Primer: **Sika®-Level-01 Primer**
Base coat: **Sika® Level-200**
Top layer: wood floors, tiles, carpet, resilient sheets, polyurethane resin floors etc.
Total layer thickness: approx. **0.5 – 10 mm**

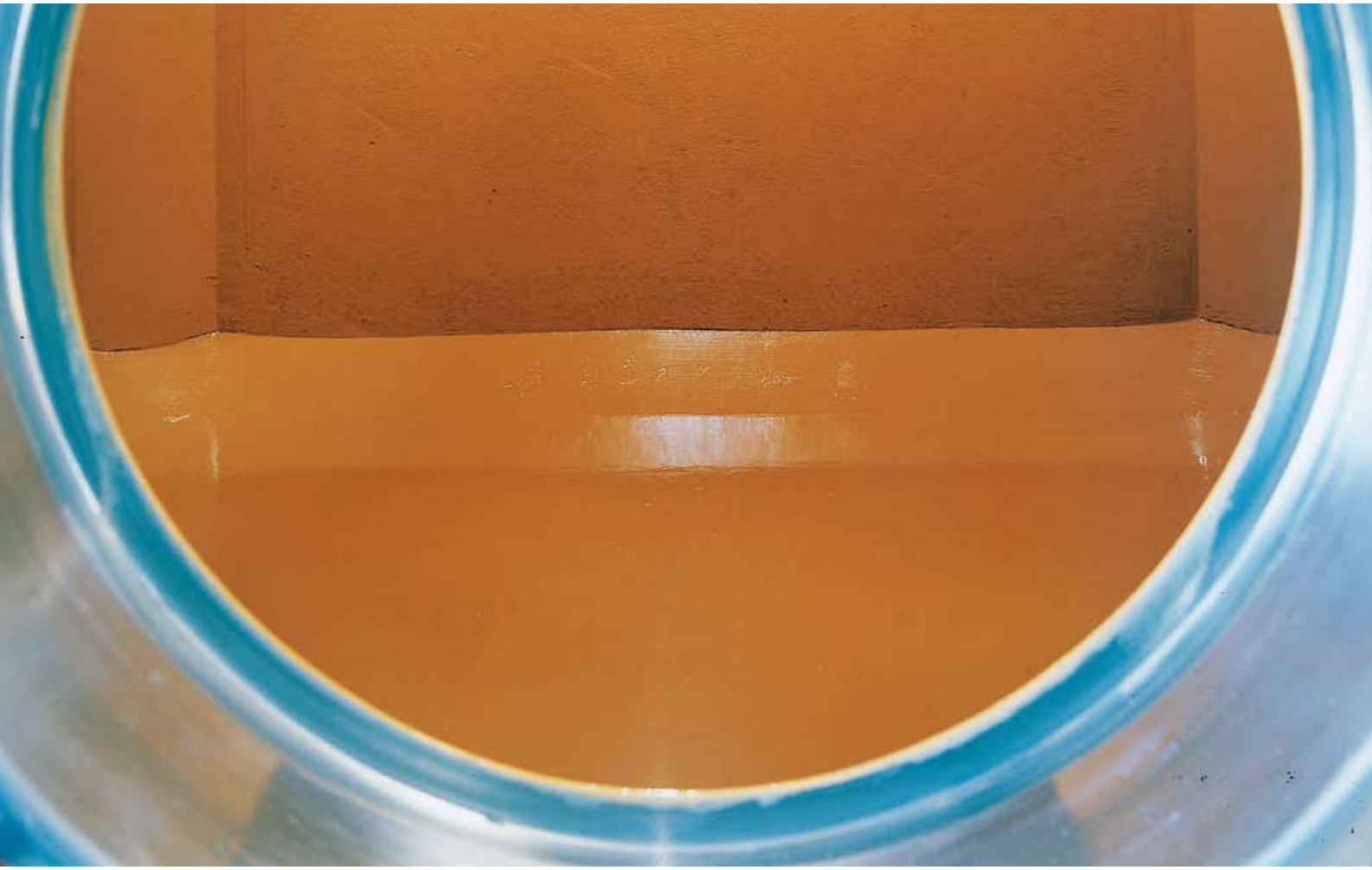
High Performance Cementitious Levelling Screed

- Cementitious self levelling
- Fast application
- Very smooth and pore free surface
- Easy to place
- Low shrinkage
- Fast setting and drying
- Very good surface appearance and hardness
- Very low emissions – EC1



Primer: **Sika®-Level-01 Primer**
Base coat: **Sika® Level-300**
Top layer: wood floors, tiles, carpet, resilient sheets, polyurethane resin floors etc.
Total layer thickness: approx. **0.5 – 15 mm**

Sikafloor® and Sikagard® Solutions for Tank and Bund Lining



Secondary Containment Areas

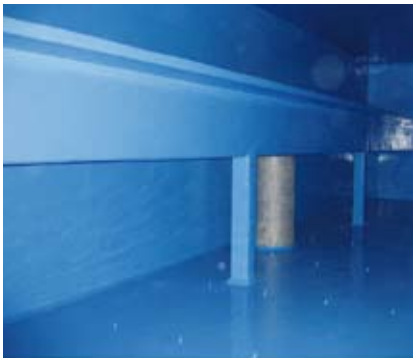
To protect the soil and the groundwater is an increasing demand based on the legislations of many governmental authorities to protect the environment. Based on our experience handling many different kinds of chemicals, i.e. acids, bases and solvents, we pushed for the development of special, epoxy resin based, easy to apply coatings to fulfil these requirements. According to German standards the coating has to have crack bridging properties and the chemical resistance has to be tested against various different chemicals.

Sewage Plants

Concrete and steel structures in sewage plants are exposed to different stresses. The waste water passes several steps of cleaning, starting with the mechanical cleaning and sedimentation, followed by biological degradation and finally chemical cleaning.
Chemical stress is caused by the waste water, biogenous sulphuric acid corrosion and the chemicals which are added to keep the process running. Mechanical stress is caused by flushing and filling, aggregates transported by the water, water flow and rakes.
Depending on the area to be protected the right choice of material has to be made.

Potable Water Installations

The interior protection of tanks and pipes in potable water installations is a very sensitive application field. Almost all countries in world do have their own legislations and certification procedure which has to be followed. Main target of the applied protective coatings is to preserve the potable water.

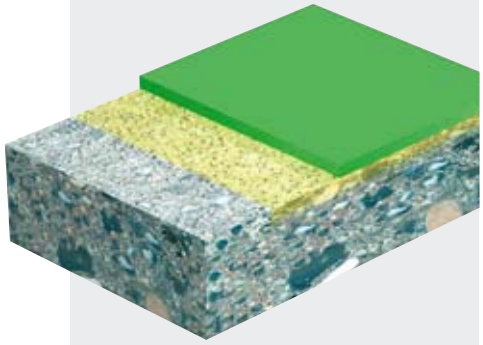


Requirements

Smooth Flexible Chemical Resistant Screed

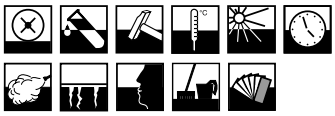
- High wear and abrasion resistance
- High chemical resistance
- Waterproof
- Coloured

Design / Build-up



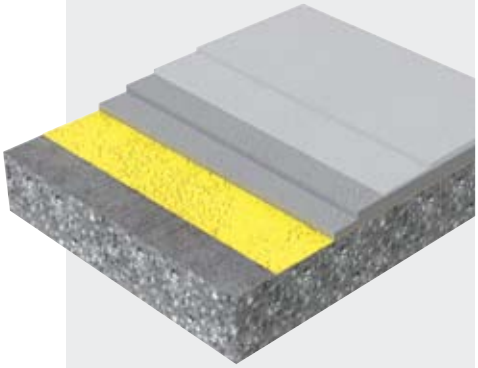
Sika System / Performance

Primer: **Sikafloor®-156/-161**
Wearing course: **Sikafloor®-390**
A two part, highly chemically resistant, crack bridging, coloured epoxy binder for self smoothing screeds.
Total system thickness: approx. **2 mm**



Smooth, Rigid, Chemical Resistant Coating and Lining

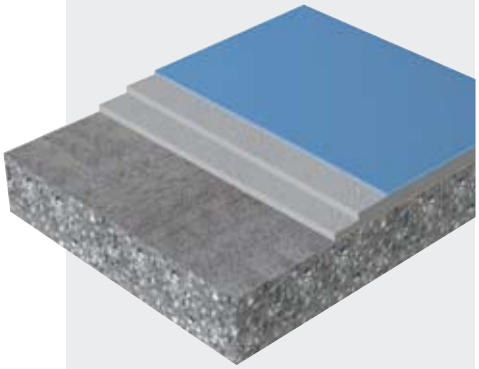
- High chemical resistance
- Waterproof
- Roller and airless spray application



Primer: **Sikafloor®-155 W N**
Base coat: **Sikagard®-720 EpoCem®**
Seal coat: **Sikagard®-63 N**
A high solid, coloured, rigid, highly chemically resistant epoxy coating for sewage treatment plants.
Total system thickness: ca. **2 – 3 mm**

Smooth, Rigid, Physiological Harmless Lining

- Certified for the use in potable water
- Easy to clean
- Resistant to many different beverages



Pore filling mortar: **Icoment-540**
Levelling mortar: **Icoment-540**
Seal coat: **Sikagard®-136 DW**
A total solid, coloured, protective epoxy coating for the interior lining of potable water installations and beverage tanks.
Total system thickness: ca. **3 – 4 mm**

* Notice:
1) The 3D graphics in this brochure are all symbolic and don't reflect the real sizes and the real proportion of the build-ups.
2) The project related performance requirements such as ⊗ are all listed on page 44 to 46

Sika® Asplit® Solutions for Acid Proof Coatings and Linings

Secondary Containment

As mentioned in the previous section, the protection of the soil and the groundwater is an increasing demand following on the legislation of most governments and authorities to protect the environment. Sika's leadership in this field has allowed us to develop highly chemically resistant, glass fabric reinforced, easy to apply coating systems that can fulfil all of these increasingly stringent requirements.

New Build

The construction and commissioning of new chemical production plants represents a huge investment. They are designed for a service life time in excess of 20 years, so the durability of the protection for these assets is a very important requirement. Every non scheduled down time for essential repairs or maintenance means a serious financial loss to the plant. To prevent this loss Sika provides highly chemically and mechanically resistant protective linings and coating systems, which ensure that production down times can be reduced to a minimum.

Refurbishment

Most existing chemical production facilities need periodic maintenance and refurbishment to make sure that the production process is running smoothly, the protection of the environment is assured and that the safety of the employees is not reduced. Sika is a full range system supplier, able to provide all of the necessary products for a plant's total refurbishment, i.e. cement based mortars for the refurbishment of the concrete as well as specialised coatings for steel structures and linings to protect process equipment.

Investigation and Survey of Areas to be Protected

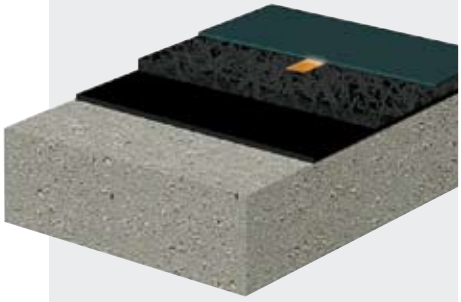
Structures and production equipment in the chemical industry are subject to many different stresses. In order to discover the root causes and extent of distress and deterioration, it is essential to carry out a professional Condition Survey and assessment. It is important to balance the cost of the investigative work with the benefits it will provide. However an appropriate survey can often be key to successfully extending the service life.
To ensure that you have all of the necessary parameters to make the right refurbishment proposals, Sika provides a Project Request Form which gives clear and useful guidelines with the main criteria to make the right decisions.

Requirements

Smooth, Flexible, High Chemical Resistant, Glass Fabric Reinforced Coating

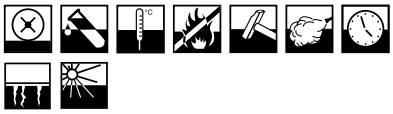
- High wear and abrasion resistance
- Highest chemical resistance
- Waterproof
- Glass fabric reinforced

Design / Build-up



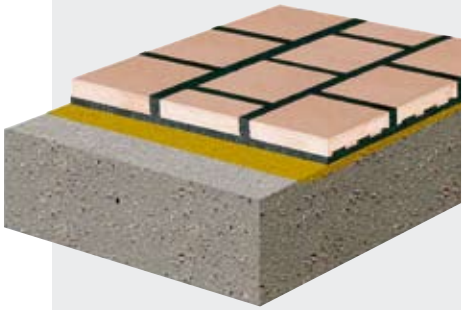
Sika System / Performance

Primer: **Sika® Asplit® VE** leveling mortar
Wearing course: **Sika® Asplit® VE** + glass fabric
A two part, highly chemical resistant, crack bridging, coloured vinyl ester resin binder for glass fiber reinforced coating systems.
Total system thickness: approx. **3 mm**



Bedding and Jointing Mortar for Acid Proof Tiles

- Good chemical resistance
- Good adhesion to tiles and the substrate
- Easy to clean



Primer: **Sika® Asplit® ET**
Bedding mortar: **Sika® Asplit® ET** bedding and jointing mortar
Jointing: **Sika® Asplit® ET** bedding and jointing mortar
A two part, high solid, coloured, rigid, high chemical resistant epoxy based bedding and jointing mortar for laying tiles in chemical, pharmaceutical, food and beverage plants.
Total system thickness: depending on the thickness of the tiles

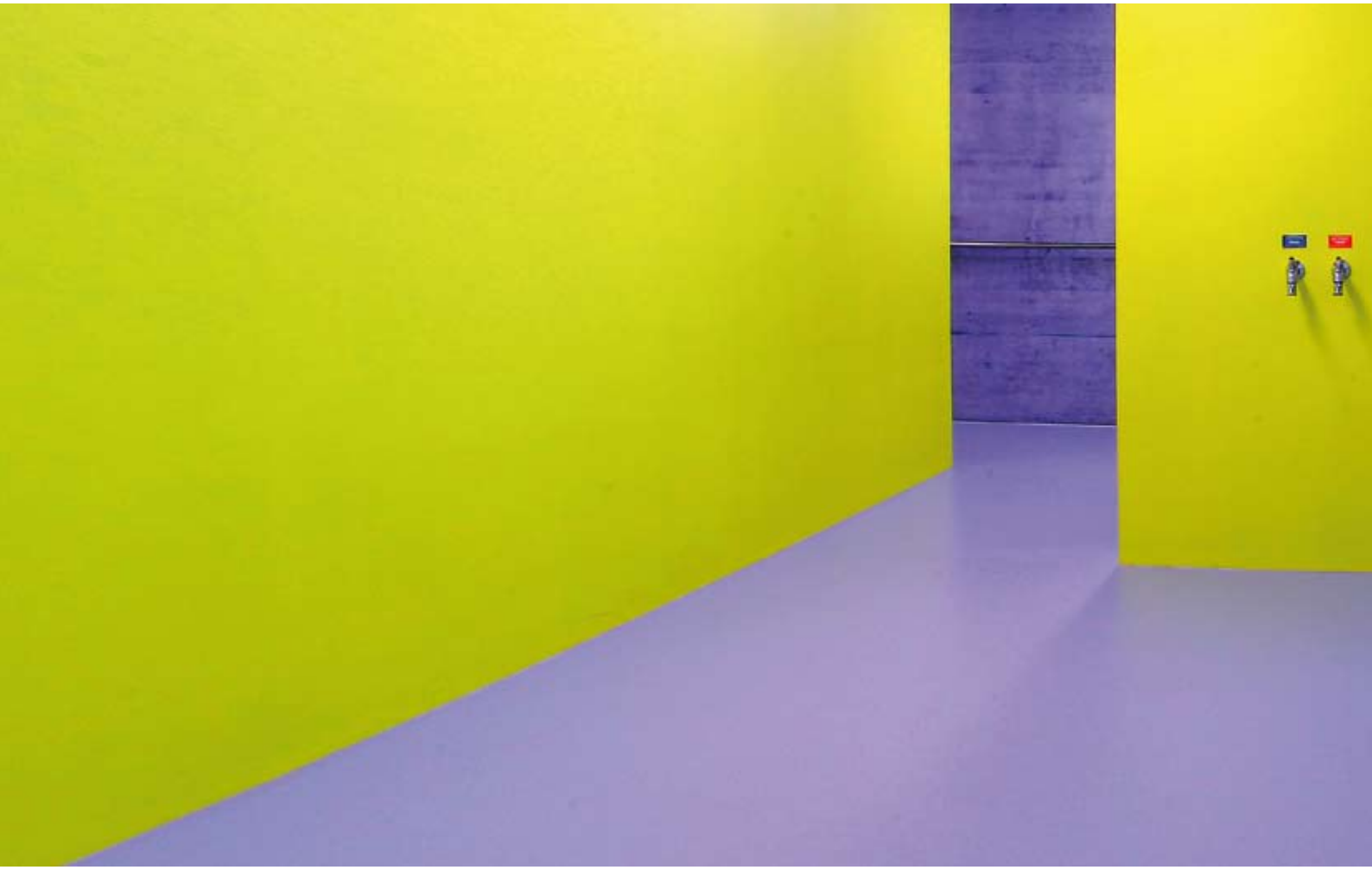
High Temperature Resistant Mortar

- Highest resistance to acids
- High resistance to oxidising agents
- Temperature resistance up to 900 °C
- Good adhesion to acid resistant bricks

Bedding and jointing: **Sika® Asplit® HB**
A sodium silicate based mortar for the interinal brick lining of chimneys
Total system thickness: depending on the dimension of the acid resistant bricks.

* Notice:
1) The 3D graphics in this brochure are all symbolic and don't reflect the real sizes and the real proportion of the build-ups.
2) The project related performance requirements such as ⊗ are all listed on page 44 to 46

Sikagard® Solutions for Walls and Ceilings



For many different exposure and performance reasons, according to the specific industry and scope of use of an area, the application of a protective wall coating is frequently necessary.

The electronic and optical industries need to have surfaces with minimal VOC's / AMC's or particle emissions, easy to clean and to ensure the area is dust free. For this increasingly demanding market **Sikagard®-183 W CR** already has all of the necessary certification and approvals.

Wine cellars, breweries and other areas where constant high humidity is present, require wall coatings with fungicidal and bactericidal properties to prevent the growth of mould and bacteria. **Sikagard®-676 W** has the ideal performance for these important areas.

Food & Beverage plants need wall coatings resistant to high pressure water jetting, detergents and other cleaning agents. **Sikagard® Wallcoat® N** is the best solution. It combines good chemical and mechanical resistance and ease of cleaning.

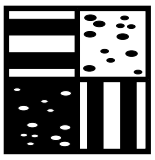
Design and Construction with Sika Flooring Systems

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 structural strengthening – for example with **Sika**® **CarboDur**® Composite Strengthening systems.

Colour and Appearance



In addition to providing seamless concrete protection against corrosive liquids and mechanical wear, flooring should also meet easy-care, hygiene, safety and durability requirements with the appropriate colour for the environment.
Achievement of both the architect and the customer's requirements always requires consideration of both functional and aesthetic criteria. With **Sikafloor**® systems a wide variety of colours, textures and visual effects can also be produced in floors which provide the overall functional performance.

Key Requirements for Consideration in Selecting a Floor System

Operational criteria	Mechanical exposure	Chemical exposure	Thermal exposure	Safety	Aesthetics and surface texture	Comfort and care
Specific requirements	■ Traffic ■ Impact ■ Abrasion ■ Loading	■ Oils, grease ■ Soluble salts ■ Solvents ■ Alkalis, acids ■ Cleaning agents	■ Heat/steam ■ Cold/frost ■ UV: light	■ Slip-resistance ■ Insulation ■ Non-flammable ■ Low odour ■ VOC-free ■ Conductivity ■ Hygienic	■ Colour ■ Design ■ Smooth ■ Textured	■ Easy to clean ■ Vibration damping ■ Sound insulation

Impregnation / Sealing / Coating / Screeding

Prepared substrate — **Prepared Substrate as a base for the wearing course**

According to requirements, condition and location: Priming / levelling / repairing

Substrate evaluation and preparation — **Blastcleaning, grinding, high-pressure water jetting depending on condition**

Dry shake/polymer concrete/cementitious overlay	Concrete/cementitous overlay	Resin screed/ coating	Poured asphalt	Ceramic tile

Base concrete

Life Cycle Management and Total Quality Management

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

Life Cycle Costing

Different industries have different life cycle expectations for flooring systems. The cleaning and maintenance regime required for the floor has the highest impact on the life cycle cost. Sika can provide optimized flooring solutions to meet all of the specific requirements you may have.

Complete Solutions and Full System Supplier

Sika can provide this complete range of flooring solutions worldwide, including resin based, cementitious and polymer modified products. Additionally, Sika provides the optimum quality and security for any client, specifier and contractor, with services including:

- Preliminary project assessment
- Detailing and training prior to and during application
- Cleaning and Maintenance Guidelines

Total Quality Management

Quality
- ISO 9001
- Innovation
- Technology

Services
- Specification
- On-site support
- Training

Environment
- Responsible care
- High solid
- ISO 14001

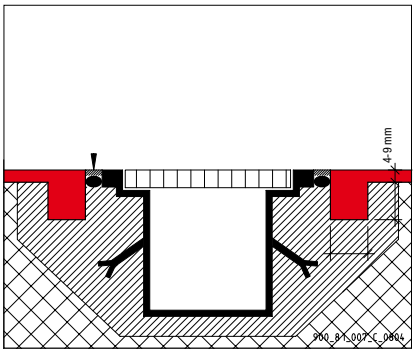
Safety
- Water based
- Low emissions
- Disposal

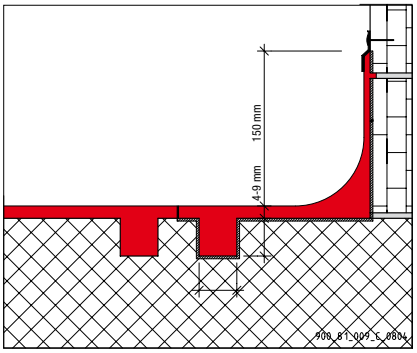
Certified Management System ISO 14001 since 1997

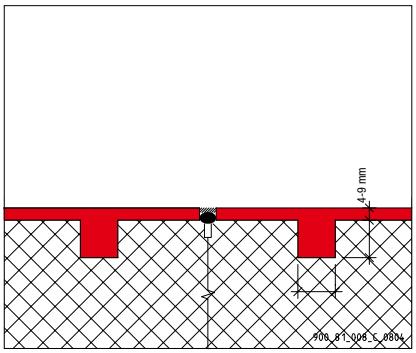
Certified Quality System ISO 9001/EN 29001 since 1986

Responsible Care

Detailing and Jointing for Flooring Applications







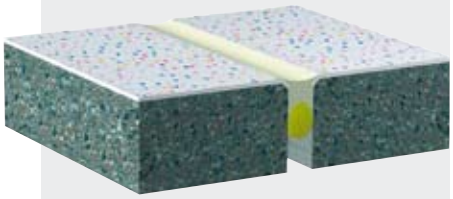
Drainage Channels / Gullies

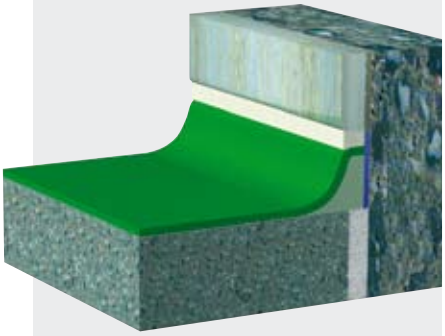
Drainage channels/gullies should always be designed to be outside of trafficked areas wherever possible. Falls on the floors should be adequate to discharge liquids as quickly as possible to the channels. When traffic over channels/gullies is unavoidable, considerable attention should be given to the channel arises and cover grating fixings, as these are the most susceptible areas for premature failure.

Jointing

There is no way to prevent joints in floors, but they are causes of the major damages in flooring applications due to different reasons. Therefore, the proper planning, design of a floor joint, has to be performed with specific precaution to prevent the damages. Furthermore, industrial floors require reliable sealants to resist chemical and mechanical wear, such as the floors designed for vehicle traffic or cleaning machines, etc.
Sika® solution of the joint sealant is the use of the well-known and reliable **Sikaflex**® **Pro-3 WF** for all type of flooring joints beside interstice joints.

Jointing Design / Build-up





High Performance Sealant for Flooring

- Compliance for contact with foodstuff, i.e. ISEGA
- In accordance with relevant international guidelines and standards
- Applicable for damp substrates in floor joints
- High mechanical resistance
- Resistant to floor cleaning machine brushes
- Excellent tear resistance
- Movement capability 25%
- Resistant against most cleaning agents
- Compatible with **Sikafloor**® Systems
- Bubble-free curing
- Easy to apply

Primer: **Sika**® **Primer-3 N**
Joint sealant: **Sikaflex**® **PRO-3 WF**
A moisture curing 1-part elastic sealant based on polyurethane for flooring.

Joint Dimensions:
min./max. width = 10/35 mm

For Food

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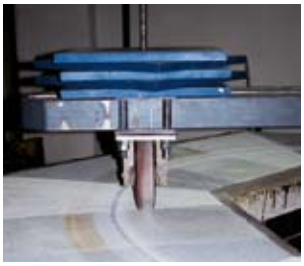
2) The project related performance requirements such as ⊗ are all listed on page 44 to 46

Project Related Performance Requirements



Traffic and Mechanical Wear

Heavy and frequent traffic increases 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 spills of chemicals and temperature extremes from hot water or steam used for cleaning and cold from blast freezers can represent an extremely demanding environment, which many **Sikafloor**® systems can durably accommodate.

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 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.

Fire Resistance

Fire classifications for floors are given by national and local authorities.
Floors protected and designed with liquid polymers also have to meet these requirements, which is no problem for **Sikafloor**® systems.

Hygiene

Today's floors have to fulfil the highest hygiene and increasingly very specific requirements for the prevention of contamination, particularly in the nuclear, pharmaceutical, cosmetic, food, beverage, chemical and electronics industries.

Impact Resistance, Point Loading

In areas where goods are handled such as production areas, warehouses, loading bays etc., compressive and dynamic loads are generated by the movement of these goods on lines, lift trucks and pallets etc. It is essential to ensure that the stresses generated are not higher than the strength of the floor topping material and / or the substrate.

Waterproofing

Sikafloor® systems can provide an impermeable seal to protect both the concrete from attack by aggressive liquids and the underlying ground water from the leakage of pollutants. This ensures the reliable containment of these aggressive and environmentally harmful materials.

Rapid Curing

Flooring systems with rapid curing properties can reduce the down-time to a minimum. This is often required during refurbishment, new construction and for low temperature applications. Sika has a complete range of fast curing and accelerated systems.

Floor Coating on Green and Damp Concrete

No Osmosis

In many refurbishment and new construction situations, freshly poured concrete must be coated and protected quickly. To reduce the waiting time for specific moisture evaporation from the substrate, innovative solutions such as **Sika® EpoCem® Technology** can be used.

Crack-Bridging Ability

Static and dynamic crack-bridging properties are often required for floor coating systems in order to adequately protect the substrate, for instance on car park decks, otherwise sufficient stress relief and/or movement joints must be incorpo-rated into the structure itself.
Sika systems are tested for the crack-bridging performance down to at least -20 °C.

Damping of Impact Noise

Public transit and gathering places, such as entrance halls, corridors, display and sales areas require higher comfort levels against impact noise and airborne noise transmission. For this reason, flexible Sika flooring systems are recommended.
Note: SikaBond® adhesives are also available to help wooden floor systems meet these same objectives (including the new European Part E sound transmission regulations).

Neutral Odour, VOC-Free

Total solids or solvent free systems with neutral odour and low VOC emissions should always be considered where appropriate, such as indoor/ internal or closed area applications.

Electrical Conductivity/ ESD

There is an increasing demand for conductive flooring solutions. These 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. Please also see Pages 23 to 25 of this brochure.

Cleaning and Maintenance

In order to ensure that Sika flooring solutions stay in the best of shape and give years of satisfaction, we provide fully detailed cleaning and maintenance advice and guidelines for your assistance in the **Sikafloor®** Cleaning Regime, which is available to download from: www.sika.com.

Thermal Conductivity

Users can perceive the warmth of a floor to their feet very differently and subjectively. In addition to the ambient room and floor surface temperatures, the thermal conductivity of the substrate is usually the most significant factor. Sika provides highly insulated and elastic Comfort Flooring solutions where this is an issue. – Please also refer to Page 32 of this brochure.

Project Related Performance Requirements (continued)

Multiple Colour Shades

The **Sikafloor**® range is available in almost every stable colour shade and special colours can be made to order or matched to a client's requirements.

UV Light Resistance

Where colour is important or where high UV Light radiation exposure is anticipated, suitably resistant and light fast **Sikafloor**® Systems are available.

Resistance to Furniture Castors

The wheels or castors on many chairs and other furniture are relatively small in diameter and therefore can create heavy point loads on the floor. Only suitable flooring systems with proven abrasion resistance should be chosen.

VOC/AMC Emissions

One of the main objectives for flooring and wall coatings in cleanrooms is to prevent the potentially damaging effects of VOC/AMC's (Volatile Organic Compounds/ Airborne Molecular Contaminants) being released into the atmosphere and affecting the quality of the sensitive materials produced in these areas.
The **Sikafloor**® **CR** systems are the 'state of the art' in this technology and have been tested to give the best performance on the global market.

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 stuffs, 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. Please also refer to the **Sikafloor**® **CR** systems on Pages 20 to 21.

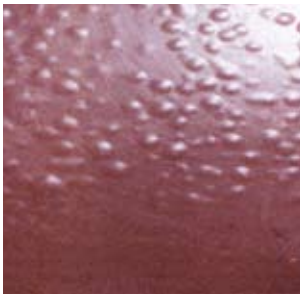
Flatness and Level

For providing a smooth (flat) or horizontal (level) surface for low performance requirements, such as prior to the application of final wearing courses like carpets, resilient flooring, wood floors, sports floors or tiling in indoor residential or public access areas, or for high performance specifications requiring extreme values for defined traffic high storage facilities or pneumatic transport.

Time is Money – Cut the Waiting Time in Both New Construction and Repair Works

The scheduled flooring 'start' and 'finish' on site, does not always match the overall construction time required (i. e. Necessary waiting times / delays due to substrate condition or environmental limitations etc).

The floor finishes on most construction sites are one of the last applications and so they 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 %) 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 or -82 EpoCem®**. These can be applied directly onto 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.



Sika® "EpoCem®" technology prevents or overcomes coating failures related to coating fresh and damp concrete

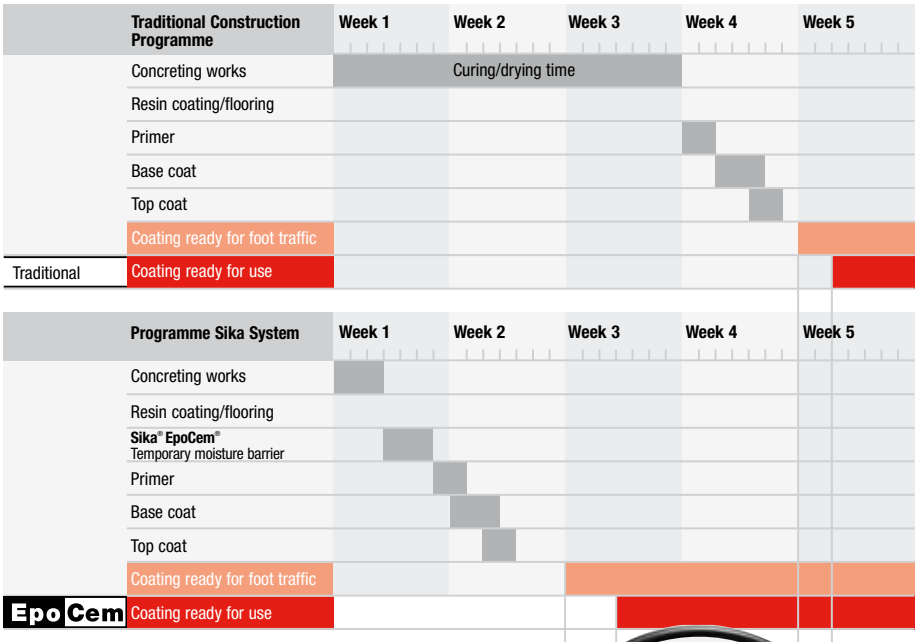
An additional opportunity for the use of **Sikafloor® EpoCem®** is when you are not sure if the concrete slab has an intact waterproofing membrane underneath it or not. Rising moisture can cause serious problems on ground bearing slabs for many types of resin based floor coatings, frequently leading to blistering or delamination.

The advantages of **Sikafloor® EpoCem®** are based on the unique systems components. It consists of an epoxy dispersion in a cementitious self-levelling mortar screed. Application thickness varies from 2 to 8 mm, dependent on the system. With this material you can achieve a fully homogeneous, sound and smooth substrate for the floor topping. The combined epoxy-cement matrix forms a temporary barrier against rising moisture and it also provides a high strength substrate.

The uniform and homogeneous intermediate layer allows an overcoating with high solid and high build resin based coatings within a short waiting time of 18 to 36 hours after application. There are no additional surface preparation necessary to achieve a pore free smooth floor.

Schematic of Planned Time Savings with Sika® EpoCem® Technology:

The installation of the floor finishes and the time before additional works can continue or they can be put into operational service, represents a major time factor on many projects.
The time saving and cost advantages obtained with **Sika® EpoCem® Technology** can be very substantial.



EpoCem®

No more Waiting. No more Delays.

The Sikafloor® Application Procedure
Substrate Inspection and Preparation

The substrate is the basis of a floor, whether it is new or old. Thorough inspection and assessment are essential to determine the correct substrate preparation for a successful flooring system.

A durable bond must be achieved between the new floor system and the substrate.

This requires a dry, sound and clean surface to be prepared, without dust or other contaminants, prior to application of the flooring system.

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 suitability of the compressive strength.

Determining the Cohesive Strength

Concrete substrates generally have cement laitance with low strengths in the top few mm. This weak layer must always be removed. Stresses from concrete shrinkage, thermal shock or excessive loading may also lead to reduced cohesive strength.
The minimum should be: ≥ 1.5 N/mm² (≥ 1.5 MPa). Any inadequate areas must be removed and replaced.

Substrate Moisture Content

It is extremely important to measure the substrate moisture content because cement bound substrates should normally only be coated at a moisture level of < 4% pbw. A very simple method for checking moisture presence is the test according ASTM D4263 (Polyethylene-sheet) (at least 1 m × 1 m of polyethylene sheet, taped to the concrete surface). This should be left in position for at least 24 hours, prior to removal and testing. Any condensed vapour transmissions are thereby detected. Substrate moisture greater than 4% by volume or rising moisture (condensed vapour) indicates the need for additional drying time or the use of **Sikafloor® EpoCem® Technology** as a temporary moisture barrier.

Ambient Conditions

If atmospheric climate factors are ignored, serious flooring defects such as poor adhesion, water marks, void formation, irregular surfaces and inadequate curing may occur. The following data must therefore be checked several times a day, before, during and after application to ensure that they are within the system limitations:

- Ambient temperature (air temperature)
- Substrate temperature
- Dew point

Preparation and Cleaning

Areas of weak substrate or surface laitance will compromise the adhesion characteristics of any installed system, if not fully removed. Surfaces must therefore always be mechanically prepared down to a sound substrate. Any dirt, dust, oils and grease or other contaminants will also reduce or prevent adhesion of any topping, so these must also be removed by thorough cleaning and vacuuming of all residues.

Product Mixing

Each Sikafloor® product needs to be thoroughly mixed prior to application.

The mixer used should always be of a low speed, compulsory/forced action type.

Drill and Mixing Paddle

This tool is only recommended for unfilled binders. Premix Comp. A first. Then add Comp. B and mix for a minimum of 3 minutes until the mix is fully homogeneous.

Double Mixing Paddle (free hand or on a stand)

This is the ideal tool for all filled binder systems as well as for mortar mixes. First of all, mix Component A + B together, put the premixed A + B Component or liquid binder in the mixing pail, and then add Powder Comp. C while stirring. Mix for a minimum of 3 minutes until the mix is fully homogeneous.

Forced Action Pan Mixer

This machine is designed for the correct mixing of all types of mortar and screed. First of all, put the powder component in the mixing pail, and then add the premixed A + B Component or liquid binder while stirring. Mix for a minimum of 3 minutes until the mix is fully homogeneous.

The Sikafloor® Application Procedure
Application Tools

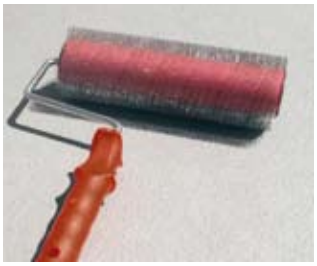
Barrel-cart: modified for drum handling with Application Trolley.

Application Trolley: allows easy movement of drums on site.

Mixing gauge: adjustable for every mixing ratio and every drum size.

Sealing of a broadcast layer with a straight trowel or “squeegee” blade.

Primer application with medium pile roller.



Spiked Rollers: Left a steel spike – right a plastic spike, to remove entrapped air.

Application of **Sikafloor®-264 Thixo** high build coating with a textured roller.

Film thickness end control.

Typical pumps for premixed cementitious screeds such as the **Sikafloor®**-Level range.

Power float with a variable speed control for trowel finishing of concrete and resin floors.

Note: For more detailed information, please refer to: www.sika.com

Sika® Solutions from Floor to Roof
Case Studies

Bosch Beijing, China

Project Description
Sika and Bosch have a long world wide cooperation history and Sika provides roof and flooring systems for many (new) Bosch facilities. So far Sika China has provided Bosch roofing and flooring systems for more than 15 new facilities in different cities all over China. Bosch Beijing is a good example of them.

Requirements
Roof: the roof is exposed to snow in winter and to heavy rains in summer. The client therefore wanted a solution to meet German standards even though the project was in China. It was required to have an economical light-weight solution (i.e. no heavy bituminous sheets), good UV resistance, plus very good welding properties of the membrane even at lower temperatures during construction.
Floor: the concrete floor slab was specified to receive an epoxy resin screed of 5 mm to provide a really flat surface with a uniform distribution of the heavy loads generated by their huge production machines. A good mechanical resistant and easy-to-clean surface with a good appearance was also demanded.

Sika Solutions
The construction of Bosch Beijing was completed at the end of 2005 where 31'000 m² **Sikaplan®-15 G** was applied and 21'000 m² **Sikafloor®-156** epoxy screed with textured top coat **Sikafloor®-261 Thixo** was applied.
Sika China's quality systems fulfilled Bosch expectations and reinforced the close cooperation with Bosch in the form of technical proposals, approved Sika applicators, and Sika expertise on site led to a most satisfactory result.

Westside Multifunctional Mall, Bern, Switzerland

Project Description
This impressive multifunctional centre is located to the west of the Swiss capital, Bern, and has 60 shops and boutiques, a multiplex cinema, 10 restaurants, a pool, spa and fitness areas, a hotel, a conference centre and a senior citizen home, etc.

Project Requirements
This complex extends across a motorway, so an existing highway tunnel had to be extended as part of the project. The technical, time and economic requirements were high. A lot of different parts of the complex needed different system solutions, e.g. basement, parking areas, storage and logistics areas, sanitary and pool areas, the steel structure, façade elements, the roof and so on.

Sika Solutions
Watertight concrete basement solutions: Superplasticiser® for 90'000 m³ of concrete with excellent workability, reduced water cement ratio and better waterproofing properties; **Sika® Waterbar** for waterproofing joints; supervision and design support of the specialised waterproofing engineers from Permaton®.
Corrosion and Fire Protection solutions for the Steel Structure: 16'000 m² of **SikaCor®** corrosion protective coating with attractive colours; **Sika Cafco®** system as fire protective sprayed rendering.
Flooring solutions for car park decks and logistics areas: total 50'000 m²; **Sikafloor® EpoCem** moisture barrier for selected areas; elastified **Sikafloor®-390**; crack bridging **Sikalastic®-821** and **Sikafloor®-355** for where ground movements were expected; high performance **Sika Elastomastic® TF** system for areas of intense wear like entrance areas, ramps, etc.
Floor and Wall Coating solutions with attractive colours: 6000 m² of **Sikafloor®** coating with different colours for the pool area and walls and floors of the bathrooms.
Roofing solution: 25'000 m² of **Sarnafil®**, **Sucoflex®** roofing membranes.
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