



StoCretec | **Flooring materials**

Flooring systems for industry

The information in this brochure represents the knowledge available to us at present, based on many years of experience and comprehensive testing. The said information is intended to supplement the guidelines for application and the technical data sheets. Owing to the comprehensive scope of applications and techniques involved, we are unable to guarantee the validity of the information in all instances. Our systems and products are subject to ongoing development and we reserve the right to effect modifications for technical and legal reasons. Please refer to our internet site at www.sto.com or your Sto consultant for our latest technical information. This brochure will cease to apply upon publication of a new edition.

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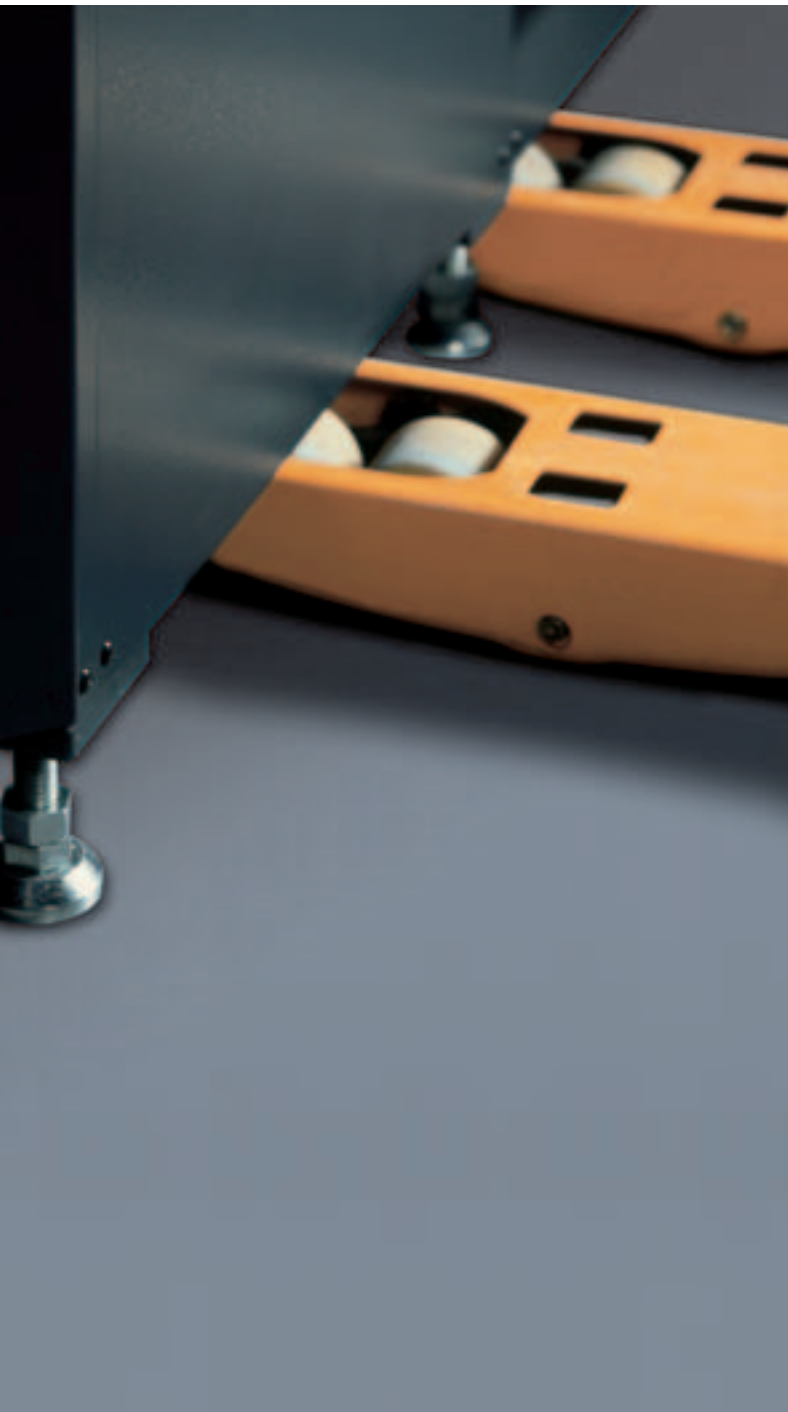
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StoCretec: Flooring systems for industry

Industrial flooring materials are required to offer merits which meet the practical needs of the various branches of industry. The StoCretec flooring systems are broken down below into solutions for general industrial applications, solutions for the automobile industry and solutions for the electronics and computer industry.



These areas are then sub-divided according to three stress categories – low, medium and high. The requirements pertaining to a floor in the area of microchip production, involving a light level of mechanical stress, are quite different to the conditions which apply at an engine factory, for example.

The 21 system structures presented show a cross-section of the range of StoCretec flooring materials which are suitable for deployment in industrial and commercial applications. Your Sto consultant will be able to put together additional special solutions – after carrying out an in-depth analysis of the given situation and requirements on site.



System solutions for general industrial applications

Several thousand square metres of flooring materials are laid annually in the general industrial sector. These include both new flooring and the renovation of existing surfaces. This branch of industry demonstrates particularly clearly the diverse forms of use for industrial flooring. The properties which flooring materials are required to offer cover a correspondingly broad spectrum. The mechanical effects of transport vehicles have to be taken into account in particular in areas in which storage, packaging or order-picking operations are carried out, for example. Production areas generally represent a major challenge for flooring. In addition to mechanical stress, flooring may also be exposed to thermal and chemical stress here.

System solutions for the automobile industry

The requirements for flooring materials are subject to continual change. For a sector of industry such as automobile manufacturing, with its high level of innovation and major economic importance, it is crucial to respond to the constantly changing requirements with which it is confronted. The increasing mobility of society and the rising standards of vehicles – from commercial vehicles to status symbols – call for an increasing diversification of components, for example. This, in turn, imposes higher requirements on production conditions. Large areas, flexible use and high quality are crucial factors for flooring materials in this area.

System solutions for the electronics/computer industry

Special protection standards need to be observed in production areas in the electronics industry, e.g. in microchip manufacturing. The onus here is on protecting sensitive electronic devices from electrostatic discharge. Floors with electrostatic discharging capability play a decisive role here. Sto offers various flooring systems with electrostatic discharging capability for production areas, operating rooms, clean rooms and other purposes. A number of system structures for the industrial sector are presented by way of example on the following pages. The differentiation according to low, medium and high stress will assist in choosing the appropriate flooring system.



Fundamentals: Substrates – primers – stress classes

The requirements imposed by the intended form of use are of paramount importance in selecting the appropriate flooring system. Nevertheless, parameters such as the state or type of substrate and the appropriate primer should not be ignored, either.

Substrates

The choice of flooring system is not dependent solely on the future stress – every product system must also be configured according to the nature of the existing substrate. Quite different types of substrate may exist in any working area, according to the location, any old flooring which may be in place or the level of use. It is thus important to examine the substrate closely in the course of an initial site survey. The appropriate primer and required flooring material can then be selected on the basis of this information.

Possible substrates

- Dry concrete/cement screed
- Concrete/cement screed with increased moisture level
- Oil-contaminated concrete/cement screed
- Anhydrite/magnesia screed
- Old flooring material
- Mastic asphalt screed

The tables opposite show which StoCretec flooring system is suitable for the respective types of existing substrate.

Primers

A standard flooring system breaks down into a primer, an intermediate coating where appropriate, the actual flooring material and a top sealant. It is important for planners and applicators to make the right choices, starting with the primer: What are the given conditions? What is the nature of the substrate? What requirements does the primer thus need to meet? Only when this information has been established can the appropriate primer product be selected. The overview opposite indicates which StoCretec primers are suitable for the respective conditions and purposes.

General requirements for a primer

- Alkali resistance
- Moisture resistance
- Temperature resistance
- Adhesion to damp substrate
- Pore-sealing
- Consolidating
- Equalisation of absorbency
- Adhesion to subsequent coatings





Overview of primers for special substrates

Substrates	Concrete/ cement screed dry	Concrete/ cement screed damp	Oil-contaminated concrete/ cement screed (substrate)	Anhydrite screed Magnesia screed	Old flooring on epoxy resin base
StoPox SGM	•				
StoPox GH 300	•				
StoPox GH 205	•				
StoPox GF	•				
StoPox 452 EP	•	•			
StoPox FBS LF	•	•			
StoPox WG 100	•	•		•	•
StoPox WL 100	•			•	•
StoPox HVP O	•	•	•		

Primers and their areas of application

Primer	Area of application	Properties
StoPox SGM	Epoxy primer for swift repairs at the weekend	Quick hardening, even at low temperatures
StoPox GH 205	Standard primer for primarily mineral substrates	<ul style="list-style-type: none"> • Excellent wetting properties • Excellent ventilating properties
StoPox GF	Epoxy primer for mineral substrates in contact with the ground and subject to moisture penetration from the underside	Alkali-resistant damp course when danger of rising damp applies
StoPox 452 EP	Epoxy primer for damp substrates	<ul style="list-style-type: none"> • Excellent adhesion promoter on damp mineral substrates • Excellent adhesion on metal/steel
StoPox WG 100	Water-based epoxy primer for water vapour-permeable coatings	Outstanding adhesion promoter on various substrates (mineral substrates, magnesia screed, anhydrite screed, old flooring material)
StoPox HVP O	Epoxy primer for coating over oil-contaminated mineral substrates	After a special cleaning process, prevents oil from rising up further through the flooring system
StoPox WHG Grund	System primer of the building inspectorate-approved Sto water conservation system	Meets the system requirements of the general construction and testing principles for water conservation in Germany



Stress classes

Flooring in industrial buildings generally consists of two elements, each of which is assigned specific tasks: A floor slab, which serves to bear static and dynamic loads, and the actual flooring material, which affords protection from physical or chemical stress. Industrial flooring can only fulfil its task to maximum effect if the precise requirements pertaining to the individual application are defined in the planning phase, however. The subsequent usage (type of stress) thus determines the choice of flooring system.

A number of stress parameters of relevance to selection of a suitable flooring material serve to clarify the classifications in the table:

- Frequency of exposure to stress
- Shearing force
- Mass of the stress-imposing object
- Compressive strength – wheels/ air pressure/hardness

Overview of stress classes by reference to examples

Substrates	Pedestrians, cyclists, etc.	Cars, fork-lifts with pneumatic tyres, etc., lifting trucks	Lorries, fork-lifts with Vulkolan wheels, etc.
Frequency of exposure to stress	medium	medium	medium
Shearing force	low	medium	high
Mass of the stress-imposing object	low	medium	high
Compressive strength – wheels/ air pressure/hardness	low	medium	high
Overall classification	low	medium	high



The different stress classes are defined according to three levels:



low



medium



high





The StoCretec system solutions for general industrial applications, for the automobile industry and for the electronics/computer industry are presented on the following pages.

The systems in the tables are allocated to the three levels of mechanical stress – low, medium, high. The images clearly indicate which system is designed for which type of stress.








StoCretec systems: Solutions for general industrial applications

Manifold requirements are imposed on flooring materials in industry. Mechanical or chemical requirements may predominate, depending on the branch of industry concerned. Legal stipulations relating to water conservation or slip resistance, for example, further broaden the scope of requirements. The table below presents a selection of possible system structures.

	Low mechanical stress		Medium mechanical stress	
Properties	<ul style="list-style-type: none"> • Diffusion open • Water-based, solvent-free 	<ul style="list-style-type: none"> • High resistance to chemicals • Simple to apply, also to wall surfaces • High hiding power 	<ul style="list-style-type: none"> • Resistant to chemicals • Large number of test certificates 	<ul style="list-style-type: none"> • Footfall sound-insulating • Crack-bridging properties • Coating on mastic asphalt possible • Electrostatic discharging capability possible
Primer	StoPox WL 100 + water up to max. 20 %	StoPox BI	StoPox GH 205, sand with StoQuarz 0.1-0.5 mm	StoPox GH 205, sand with StoQuarz 0.1-0.5 mm
Intermediate coating				
Flooring material			StoPox BB OS and Chips (optional)	StoPox IB 501
Sealant	StoPox WL 100 coloured and StoPox WL 200	StoPox UA in 2 coating operations	StoPox WL 100 transparent or StoPur WV 200 transparent	StoPur WV 200 coloured or transparent
Care agent	StoDivers P 105	StoDivers P 105	StoDivers P 105 or StoDivers P 120	StoDivers P 105 or StoDivers P 120
Layer thickness	<1 mm	<1 mm	1.5-3 mm	approx. 2 mm
Colour	RAL colour chart/ StoColor System	RAL colour chart	RAL or other colour chart	RAL or other colour chart
Area of application Also for substrates/ states opposite with appropriate special primer	<ul style="list-style-type: none"> • Rear moisture penetration • Anhydrite screed • Magnesia screed 	<ul style="list-style-type: none"> • Old flooring materials 	<ul style="list-style-type: none"> • Rear moisture penetration • Oil-contaminated substrates • Old flooring materials 	<ul style="list-style-type: none"> • Rear moisture penetration • Anhydrite screed • Magnesia screed
				






High mechanical stress

<ul style="list-style-type: none"> • Suitable for clean rooms (exhalation-free) • Slip-resistant finish possible • Resistant to chemicals • Diffusion open 	<ul style="list-style-type: none"> • Highly fillable bedding mortar • Resistant to chemicals 	<ul style="list-style-type: none"> • High chemical resistance • Electrostatic discharging capability possible • Approved in acc. with Section 19 of the German water management act (WHG) • Suitable for indoor and outdoor applications 	<ul style="list-style-type: none"> • Quick hardening • Slip-resistant • High chemical resistance 	<ul style="list-style-type: none"> • Large layer thicknesses possible • Slip-resistant • Highly resistant to mechanical stress • Suitable for permanently wet service conditions with hot steam cleaning • Suitable for indoor and outdoor applications
StoPox WG 100	StoPox GH 205, sand with StoQuarz 0.1-0.5 mm	StoPox WHG Grund, sand with StoQuarz 0.1-0.5 mm	StoPox GH 205, sand with StoQuarz 0.1-0.5 mm	StoPox GH 205, sand with StoQuarz 0.6-1.2 mm
StoPox WG 100/ StoQuarz (optional)				
StoPox WB 100	StoPox UH 100	StoPox WHG Deck	StoPox KU 601 + sand with StoQuarz 0.3-0.8 mm	StoPox MH 105/StoQuarz AS
StoPur WV 200 transparent/ StoPox WL 100/200	Sealant optional – StoPur WV 200 transparent		StoPox KU 601	Sealant optional – StoPox MH 105/StoQuarz
StoDivers P 105 or StoDivers P 120	StoDivers P 105 or StoDivers P 120		StoDivers P 105	StoDivers P 105
1.5-3 mm	1.5-3 mm	1.6 mm	2-4 mm	8-20 mm
RAL colour chart/ StoColor System	RAL or other colour chart	7032, 7035 and other RAL colours	RAL colour chart	
<ul style="list-style-type: none"> • Rear moisture penetration • Anhydrite screed • Magnesia screed 	<ul style="list-style-type: none"> • Rear moisture penetration • Oil-contaminated substrates • Old flooring materials 	<ul style="list-style-type: none"> • Rear moisture penetration • Oil-contaminated substrates 	<ul style="list-style-type: none"> • Rear moisture penetration • Oil-contaminated substrates • Old flooring materials 	<ul style="list-style-type: none"> • Rear moisture penetration • Oil-contaminated substrates
				





StoCretec systems: Solutions for the automobile industry

In addition to high technical requirements, the automobile industry also imposes high standards with regard to the appearance and design of industrial flooring. A further requirement is the so-called paint compatibility of the employed materials. The table below presents a selection of possible system structures according to the three mechanical stress criteria.

	Low mechanical stress	Medium mechanical stress	
Properties	<ul style="list-style-type: none"> • Gloss finish • Diffusion open • Solvent-free and water-dilutable 	<ul style="list-style-type: none"> • Resistant to chemicals • Silicone-free • Simple application 	<ul style="list-style-type: none"> • Textured, knob-like surface • Electrostatic discharging capability possible • Solvent-free
Primer	StoPox WL 100 + water up to max. 20 %	StoPox GH 205	StoPox GH 205, sand with StoQuarz 0.1-0.5 mm
Flooring material		StoPox BB OS	StoPox KU 400
Sealant	StoPox WL 100 coloured + water up to max. 10 %		
Care agent	StoDivers P 105	StoDivers P 105	StoDivers P 105
Layer thickness	< 1 mm	approx. 2 mm	1.5-3 mm
Colour	RAL colour chart/ StoColor System	RAL or other colour chart	RAL or other colour chart
Area of application Also for substrates/states opposite with appropriate special primer	<ul style="list-style-type: none"> • Concrete/cement screed • Magnesia screed • Anhydrite screed • Old flooring materials 	<ul style="list-style-type: none"> • Rear moisture penetration • Magnesia screed • Anhydrite screed • Oil-contaminated substrates 	<ul style="list-style-type: none"> • Oil-contaminated substrates • Old flooring materials
			





High mechanical stress

<ul style="list-style-type: none"> • Slip-resistant • Low susceptibility to yellowing 	<ul style="list-style-type: none"> • Silk-matt finish • Diffusion open • Electrostatic discharging capability possible 	<ul style="list-style-type: none"> • Enhanced crack bridging • Approved in accordance with the repair guideline issued by the German committee for reinforced steel, OS 11/F, system for parking garages 	<ul style="list-style-type: none"> • Slip-resistant • High chemical resistance • Quick hardening • Silicone-free • Electrostatic discharging capability possible
StoPox GH 205	StoPox WG 100	StoPox GH 500	StoPox GH 205, sand with StoQuarz 0.1-0.5 mm
StoPox BB OS	StoPox WB 100	StoPur EZ 500	StoPox KU 601
StoPox EP thick sealant + ballotini solid glass beads		StoPox DV 500	
StoDivers P 105	StoDivers P 105 or StoDivers P 120	StoDivers P 105	StoDivers P 105 or StoDivers P 120
2-3 mm	2-4 mm	2-3 mm	2-4 mm
RAL or other colour chart	RAL colour chart/ StoColor System	RAL or other colour chart	RAL or other colour chart
<ul style="list-style-type: none"> • Rear moisture penetration • Oil-contaminated substrates • Old flooring materials 	<ul style="list-style-type: none"> • Rear moisture penetration • Magnesia screed • Anhydrite screed 	<ul style="list-style-type: none"> • Rear moisture penetration 	<ul style="list-style-type: none"> • Rear moisture penetration • Oil-contaminated substrates
			




StoCretec systems: Solutions for the electronics/computer industry

The production of chips and electronic components imposes the most stringent requirements on the electrostatic discharging capability of industrial flooring. Compliance with international standards is imperative here. The table below shows a selection of possible system structures.

	Low mechanical stress	Medium mechanical stress
Properties	<ul style="list-style-type: none"> • Electrostatic discharging capability in accordance with DIN EN 61340-5-1, ESD STM 97.2 (Walking Test) • Low-cost ESD coating 	<ul style="list-style-type: none"> • Electrostatic discharging capability in accordance with DIN EN 61340-5-1, ESD STM 97.2 (Walking Test) • Diffusion open
Primer	StoPox WL 113	StoPox WG 100
Intermediate coating		StoPox WL 110 and StoDivers LS conductive materials set
Flooring material		StoPox WB 110
Sealant	StoPox WL 113	StoPox WL 113
Care agent	StoDivers P 110	StoDivers P 110
Layer thickness	< 1 mm	1.5 - 3 mm
Colour	Selected colours	Selected colours
Area of application Also for substrates/ states opposite with appropriate special primer	<ul style="list-style-type: none"> • Old flooring materials • Mineral substrates 	<ul style="list-style-type: none"> • Rear moisture penetration • Magnesia screed • Anhydrite screed 



High mechanical stress

<ul style="list-style-type: none"> • Matt finish • Resistant to mechanical and chemical stress 	<ul style="list-style-type: none"> • Reduced footfall sound • Suitable for application on mastic asphalt • Electrostatic discharging capability in accordance with DIN EN 61340-4-1 (ECF/DIF) 	<ul style="list-style-type: none"> • Electrostatic discharging capability in accordance with DIN EN 61340-4-1 (ECF/DIF) • Highly resistant to mechanical stress • Quick use
StoPox GH 205	StoPox 452 EP	StoPox GH 205
	StoPox WL 110 and StoDivers LS conductive materials	StoPox WL 110 and StoDivers LS conductive materials
StoPox KU 101 + Chips	StoPur IB 501/IB 511/IB 512	StoPox KU 611/KU 612
StoPur WV 200 transparent		
StoDivers P 105	StoDivers P 110	StoDivers P 110
1.5-3 mm	2-3 mm	approx. 2 mm
RAL or other colour chart	RAL or other colour chart	RAL or other colour chart
<ul style="list-style-type: none"> • Rear moisture penetration • Oil-contaminated substrates • Old flooring materials 	<ul style="list-style-type: none"> • Rear moisture penetration • Old flooring materials • Mastic asphalt substrate 	<ul style="list-style-type: none"> • Rear moisture penetration • Cement-based substrates
		

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