

Sikafloor - Clean room solutions

Construction



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Content:

- Introduction
- History
- Sika solutions



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... a bit of history ...



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Sika has got longstanding experience in this market!

Sika Industrial Coating References - Semiconductor Industry

No.	Project	Sika System	M ²	Year	NCR= CUB and support areas	
					CR= Clean room area	
					CR	NCR
1.	Telecommunications Co. Northern Inventory, Taiwan	Sikafloor 92	3'500	1989	X	
2.	Telecommunications Co. Kaohsiung Inventory, Taiwan	Sikafloor 92	2'500	1989	X	
3.	Odikung Electronics, Taiwan	Sikafloor 360	500	1989	X	
4.	Ti-Acer Semiconductor Plant, Fab-I, Taiwan	Sikafloor 380	3'000	1990	X	
5.	Texas Instruments, Italy	Sikafloor 380	15'000	1990	X	
6.	Texas Instruments, Taiwan	Sikafloor 380	10'000	1991	X	
7.	Electronics Research & Service Organization, Taiwan	Sikafloor 2430, 380, 7500	15'000	1991	X	
8.	Merk Chemical Plant, Taiwan	Sikafloor 277, 380, 380 L, 7530, 7530 L	6'000	1991	X	X
9.	Tech Semiconductor, Singapore	Sikafloor-380 & Icosit-277	6'000	1992	X	
10.	Texas Instruments, Singapore	Sikafloor 380	10'000	1992	X	
11.	X	

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Case study - Siemens Semiconductor (Simec), Dresden, Germany (1989) – 50.000m²

Consultant: Aichinger Tritthammer & Partner (ATP)
Innsbruck/München und HWP Stuttgart

MC & Supplier: Meissner& Wurst Stuttgart (now M+W Zander)

Sika Germany builds up KAM and defines the product package, i.e. spear head SR 381 with its high chemical resistance.

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Used Sika systems:

Waffle slabs

- SR-261



Walls and soffits

- Icoment 520
- SR-2530 W



Technical rooms

- SR-381 AS (chemical resistance)



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Cleanroom systems – requirements today:

- Particle
- VOC / AMC
- ESD / AS



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Waffle slab, sub fab, technical rooms

- ♦ Skim coats
- ♦ Protective coatings



Flooring

- ♦ Pore free
- ♦ ESD / AS
- ♦ Low particle emission
- ♦ Chemical resistant



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Walls, soffits and columns
in clean room areas

- ♦ Skim coats
- ♦ Protective coatings



Metal decks

- ♦ Corrosion protection

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Non-cleanroom areas , CUB

- ♦ Chemical resistant coating and lining
- ♦ Wall coatings



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Flooring systems overview:

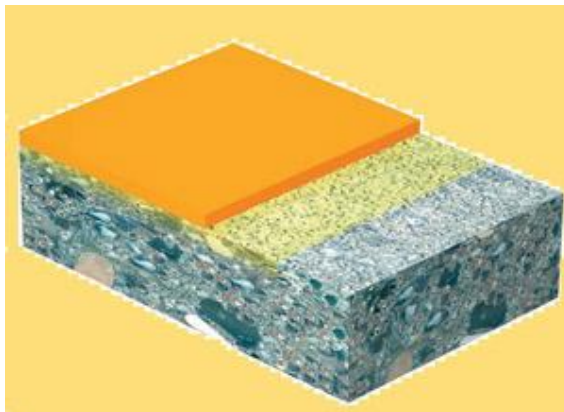
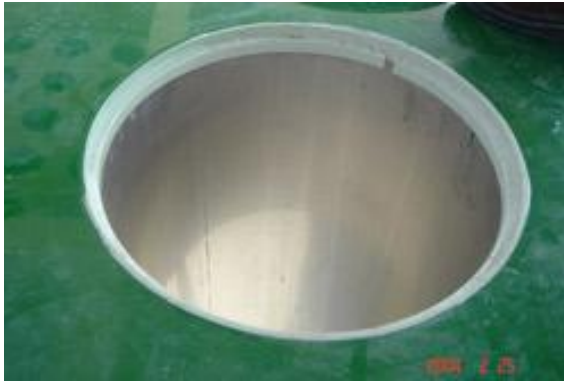
- SR-2530 W
- SR-357
- SR-264
- SR-381 / AS (chemical resistance)
- SR-390 / AS (chemical resistance and crack-bridging)
- SR-262 AS
- SR-262 AS + SR 230 ESD
- SR-235 ESD
- SR-266 CR – VOC/AMC/Particles)
(M+W Zander, IPA, USEPA)



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Flooring : Sikafloor 266 CR

High standard solution



Requirements

- ◆ Good wear resistance
- ◆ Good chemical resistance
- ◆ Decontaminable
- ◆ Easy cleaning and repair
- ◆ Aesthetic
- For >50% cleanroom area at 90°C (M+W Zander certificate)
- Particle emission (IPA certificate)
- USEPA

System build up

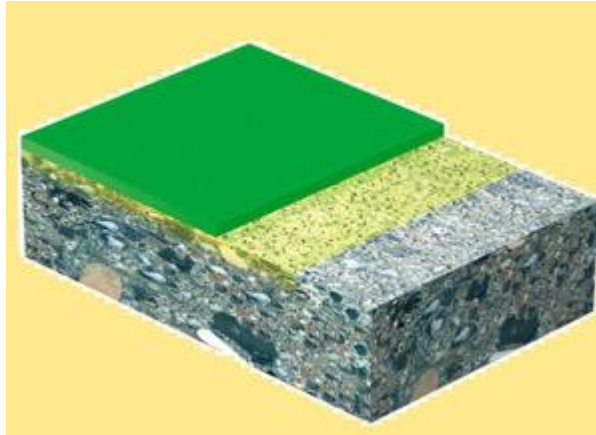
- ◆ Sikafloor-144
- ◆ Sikafloor-266 CR

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Flooring : Sikafloor 261

Economic and standard solution



Requirements

- ♦ Medium wear resistance
- ♦ Medium chemical resistant
- ♦ Decontaminable
- ♦ Easy cleaning and repair
- ♦ Aesthetic

System build up

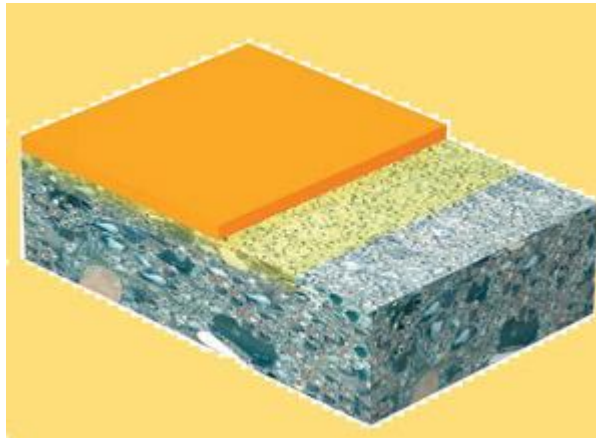
- ♦ Sikafloor-156
- ♦ Sikafloor-261

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Flooring : Sikafloor-381

High chemical resistance solution



Requirements

- ♦ High wear resistance
- ♦ High chemical resistance
- ♦ Decontaminable
- ♦ Easy cleaning and repair
- ♦ Aesthetic

System build up

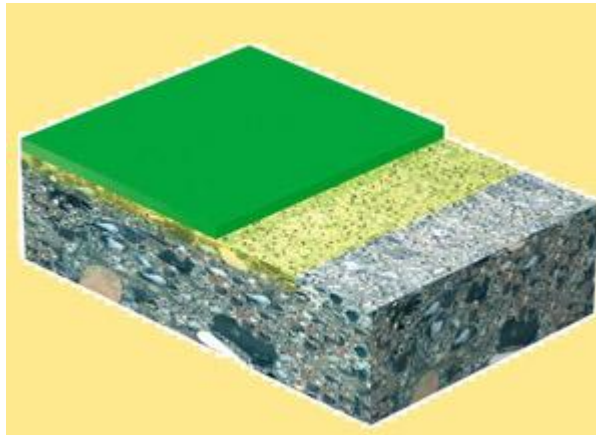
- ♦ Sikafloor-156
- ♦ Sikafloor-381

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Flooring : Sikafloor 390

Flexible and high chemical resistant solution



Requirements

- ♦ High wear resistance
- ♦ High chemical resistance
- ♦ Crack-bridging resistance
- ♦ Decontaminable
- ♦ Easy cleaning and repair
- ♦ Aesthetic

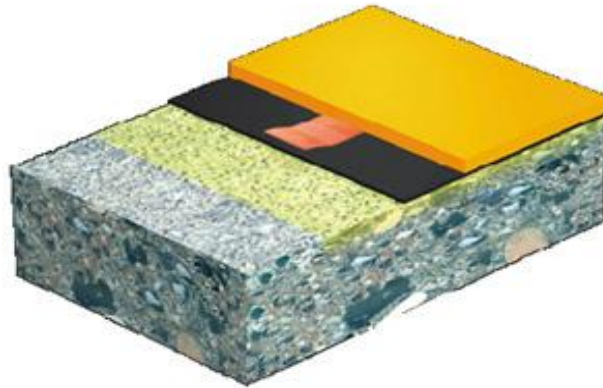
System build up

- ♦ Sikafloor-156
- ♦ Sikafloor-390

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Flooring : Sikafloor 262 AS N *Conductive solution*



Requirements

- ◆ Conductive floor IEC 61340-4-1
- ◆ Medium wear resistance
- ◆ Safety
- ◆ Easy cleaning and repair
- ◆ Aesthetic

System build up

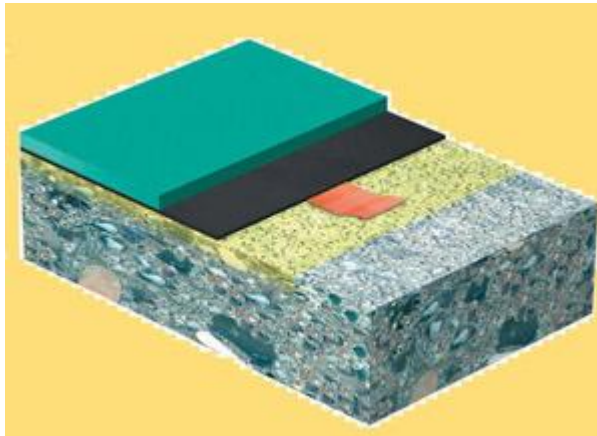
- ◆ Sikafloor-156
- ◆ Sikafloor-220 W Conductive
- ◆ Sikafloor-262 AS N

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Flooring : Sikafloor 381 AS

Conductive and high chemical resistance solution



Requirements

- ◆ Conductive floor IEC 61340-4-1
- ◆ High wear resistance
- ◆ High chemical resistance
- ◆ Safety
- ◆ Easy cleaning
- ◆ Aesthetic

System build up

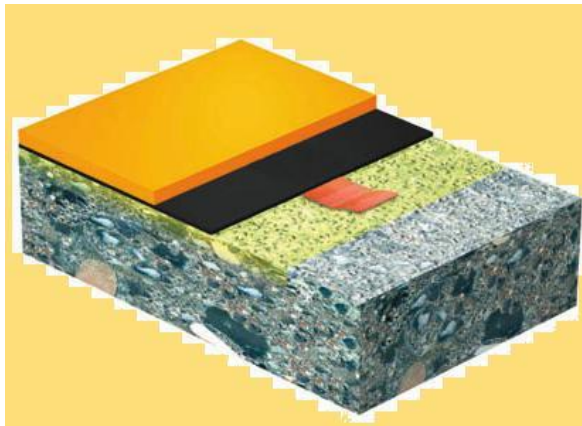
- ◆ Sikafloor-156
- ◆ Sikafloor-220 W Conductive
- ◆ Sikafloor-381 AS

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Flooring : Sikafloor 390 AS

Conductive, flexible and high chemical resistance solution



Requirements

- ♦ Conductive floor IEC 61340-4-1
- ♦ High wear resistance
- ♦ High chemical resistance
- ♦ Crack-bridging resistance
- ♦ Easy cleaning and repair
- ♦ Aesthetic

System build up

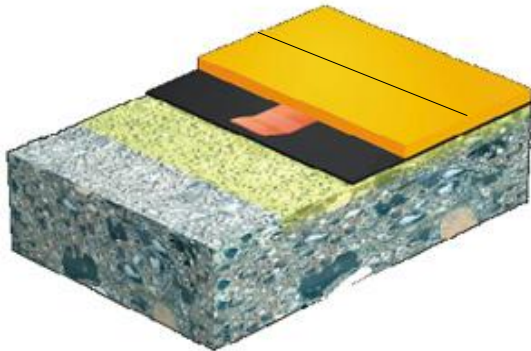
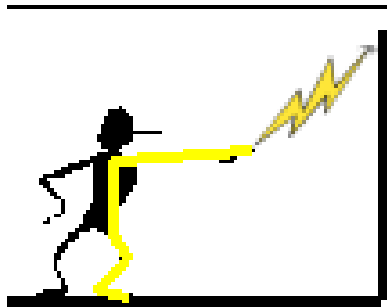
- ♦ Sikafloor-156
- ♦ Sikafloor-220 W Conductive
- ♦ Sikafloor-390 AS

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Flooring : Sikafloor-230 ESD

ESD – Top coat for conductive screeds



Requirements

- ◆ ESD floor IEC 61340-5-1 and 61340-5-2
- ◆ Medium wear resistance
- ◆ Safety
- ◆ Easy cleaning and repair
- ◆ Aesthetic

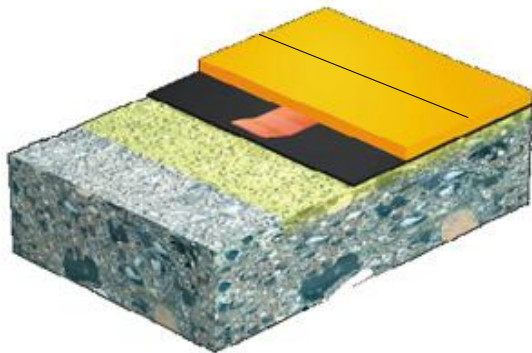
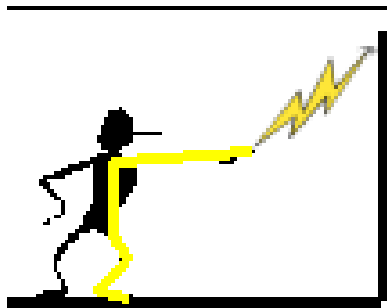
System build up

- Sikafloor-156
- Sikafloor-220 W Conductive
- Sikafloor-262 AS
- Sikafloor-230 ESD

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Flooring : Sikafloor-235 ESD *ESD self-smoothing system*



Requirements

- ◆ ESD floor IEC 61340-5-1 and 61340-5-2
- ◆ Medium wear resistance
- ◆ Safety
- ◆ Easy cleaning and repair
- ◆ Aesthetic

System build up

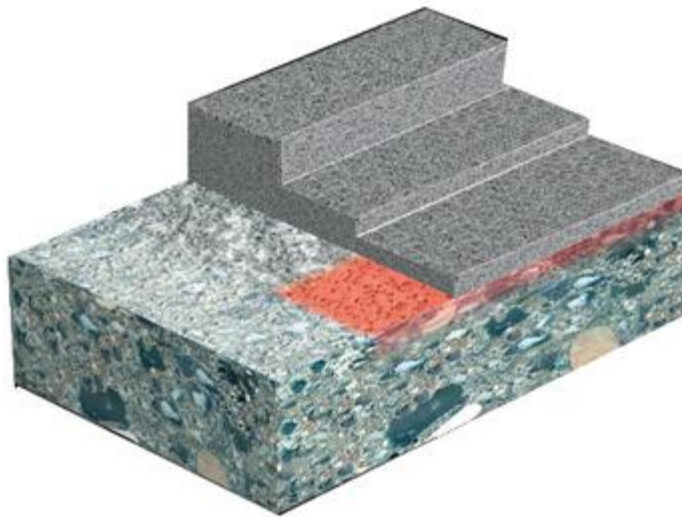
- Sikafloor-156
- Sikafloor-220 W Conductive
- Sikafloor-235 ESD

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Flooring : Sikafloor-81 EpoCem

Temporary moisture barrier on green and damp concrete



Requirements

- ♦ Reduction of waiting times
- ♦ For damaged or missing dpm
- ♦ Risk reduction of blistering
- ♦ Levelling

System build up

- ♦ Sikafloor-155 W
- ♦ Sikafloor-81 EpoCem

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**AMC specification M+W Zander
storage at 23 °C for 31 days**

Produkt	Area of the cleanroom covered by the material (% net area)		
	from 50 to 100%	from 5 to 50%	up to 5%
Sikafloor-381	<i>passed</i>	-	-
Sikafloor-381 AS	<i>passed</i>	-	-
Sikafloor-261	<i>passed</i>	-	-
Sikafloor-2530W	<i>passed</i>	-	-

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**AMC specification M+W Zander
storage at 90 °C for 31 days**

Produkt	Area of the cleanroom covered by the material (% net area)		
	from 50 to 100%	from 5 to 50%	up to 5%
Sikafloor-266 CR	<i>passed</i>	-	-
Sikafloor-381N	-	-	<i>passed</i>
Sikafloor-381 AS	-	-	<i>passed</i>
Sikafloor-261	-	-	<i>passed</i>

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Wall, soffits and column systems:

- SD-331 W – pore filler, skim coat
- SR-2530 W – skim coat
- SG-Wallcoat



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Requirements

- ♦ Pore filler
- ♦ Smooth surface
- ♦ Good chemical resistance
- ♦ Easy to clean
- ♦ Smooth finish
- ♦ Solvent-free

System build up

- Sikadur-331W
- Sikagard-Wallcoat

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Steel protection systems:

- Icosit EP-Color
- Icosit-Poxicolor
- Icosit 6630



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**AMC specification M+W Zander
storage at 23 °C for 31 days**

Produkt	Area of the cleanroom covered by the material (% net area)		
	from 50 to 100%	from 5 to 50%	up to 5%
Sikagard-Wallcoat	<i>passed</i>	-	-

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**AMC specification M+W Zander
storage at 90 °C for 31 days**

Produkt	Area of the cleanroom covered by the material (% net area)		
	from 50 to 100%	from 5 to 50%	up to 5%
Sikagard-Wallcoat	-	-	<i>passed</i>
Icosit EP-Color	-	-	<i>passed</i>
Sikafloor-261	-		<i>passed</i>

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Joint sealant systems:

- Sikaflex®- 1 A / SCR
- Sikaflex®-221 RLT
- Sikasil®- N-plus
- Sikaflex® - 521 UV

Conformity with the FDA
(Food and Drug Administration)



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Cleanroom ventilation Sikaflex 221 RLT

Requirements

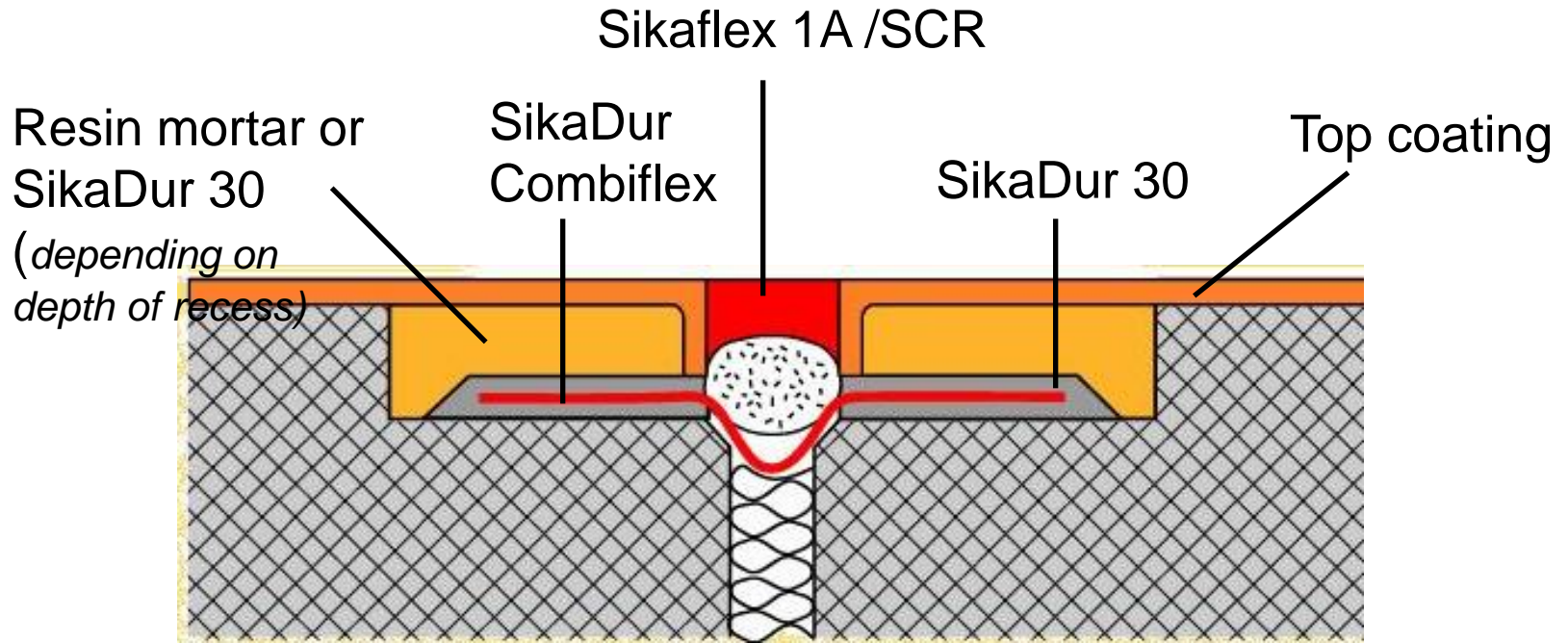
- ♦ One-component material
- ♦ Elastic
- ♦ Odourless
- ♦ Good resistance against weathering and ageing
- ♦ Non-corrosive
- ♦ Overcoatable
- ♦ Silicone free
- ♦ IPA-certificate (FDA)

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Floor details

Joint detail - movement joint



expansion joint



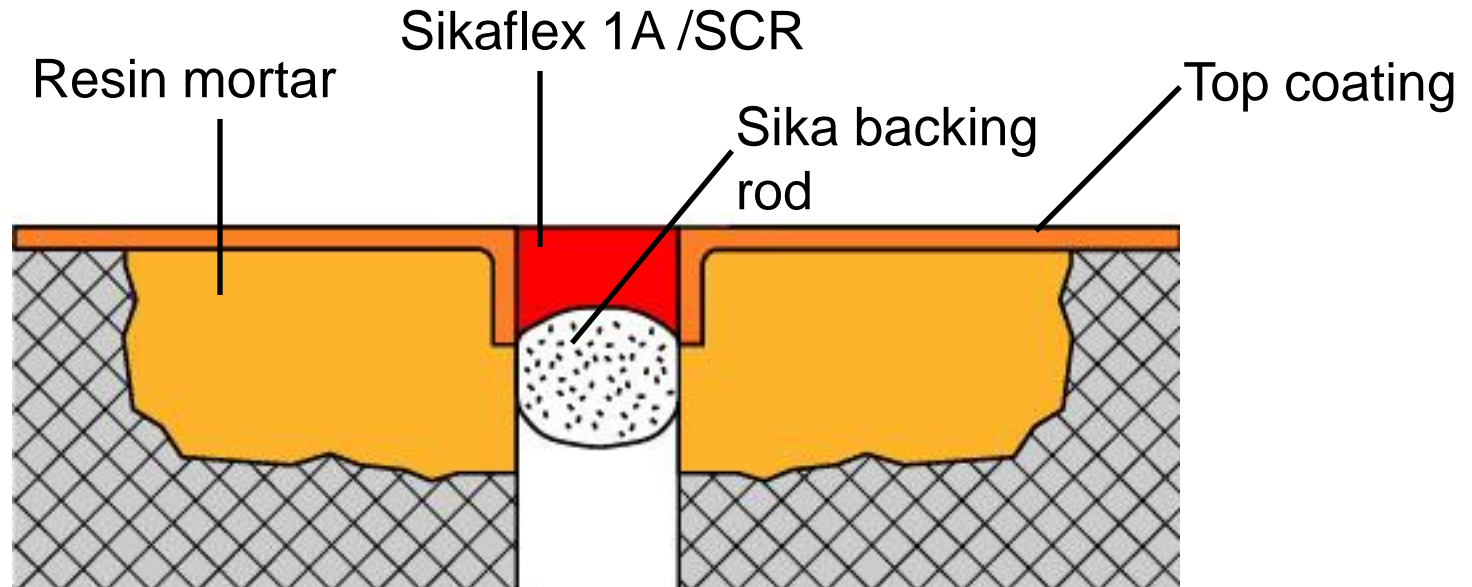
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Floor details

Joint design - movement joint



Construction joint



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Complete Competence in the Cleanroom Industry

- **Admixtures**
- **Steel protection**
- **Roofing**
- **Flooring and Lining**
- **Sealants and adhesives**



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> 6 Mio m² since 1989

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Thank you for your attention

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