BUILDING TRUST

PRODUCT DATA SHEET

Sika® Icosit® KC 350/45

Two-part polyurethane grout for continuously embedded tracks (Shore A 50)

DESCRIPTION

Sika® Icosit® KC 350/45 is a flexible, two-part polyurethane polymer resin grout that can be applied manually or by machine. It is used as a vibration-absorbing, load-bearing, flexible grout for fixing grooved or T-rails on concrete or steel surfaces, on roads, bridges and in tunnels. Sika® Icosit® KC 350/45 is particularly suitable for embedded or continuously undersealed rail designs.

USES

Sika® Icosit® KC 350/45 may only be used by experienced professionals.

Sika® Icosit® KC 350/45 is used as a:
- Noise and vibration-reducing grout

Sika® Icosit® KC 350/45 is used for:
- Fixing grooved or T-rails
- Fixing rails that are continuously undersealed, embedded or are road crossings

CHARACTERISTICS / ADVANTAGES

- Longer application time due to extended pot life and delayed viscosity increase of the mixed material
- Rapid release to traffic due to fast curing time
- High durability leads to less maintenance
- Used for axle loads up to 140 kN
- Suppresses secondary noise and vibrations
- Ensures a more uniform load distribution into the substructure
- Watertight undersealing or embedding
- Flexible, elastic (Shore A 50 hardness)
- Protection against stray currents
- Good electrical insulation
- Excellent adhesion to a variety of substrates
- Levels out tolerances
- Suitable as a shear-resistant adhesive
- Absorbs dynamic stresses and prolongs the life of substructure
- Insensitive to moisture

PRODUCT INFORMATION

Composition	Two-part polyurethane		
Packaging		**Manual application**	**Machine application**
	Part A	8.53 kg container	153 kg drum
	Part B	1.47 kg container	26.4 kg container
	Part A+B	10 kg	179.4 kg
Colour	Light grey		
Shelf Life	12 months from date of production		
Storage Conditions	The Product must be stored in original, unopened and undamaged sealed packaging in dry conditions at temperatures between +5 °C and +25 °C. Always refer to the packaging. Refer to the current Safety Data Sheet for information on safe handling and storage.		

Density	Part A	0.89 kg/L	(EN ISO 2811-1)
	Part B	1.21 kg/L	(EN ISO 2811-1)
	Parts A+B	0.91 kg/L	(ISO 1183-1)
Viscosity	Part A	4000 Pa·s (with Z 3 DIN, 20 °C)	(EN ISO 3219)
	Part B	50 Pa·s (with Z 3 DIN, 20 °C)	

TECHNICAL INFORMATION

Shore A Hardness	50 ± 5 (after 28 days) Shore hardness assists with material identification and assessing the curing progress on site.	(EN ISO 868)
Tensile Strength	1.2 N/mm²	(EN ISO 527-1)
Elongation at Break	170 %	(EN ISO 527-1)
Chemical Resistance	Sika® Icosit® KC 350/45 has a good resistance to: ▪ Water ▪ Most detergents ▪ Sea water	
	Sika® Icosit® KC 350/45 is temporarily resistant (72 hours) to: ▪ Mineral oils ▪ Diesel fuel	
	Sika® Icosit® KC 350/45 is not resistant to: ▪ Organic solvents (ester, ketone, aromates) and alcohol ▪ Concentrated acids and lyes	
	Contact Sika Technical Services for specific information.	

Electrical Resistivity	Dry conditions	8.76×10^8 - 1.02×10^9 Ω·m	(EN 50122-2)
	After heat aging	2.93 - 4.90×10^9 Ω·m	
	After storage in a 0.1 M NaCl solution. No significant water uptake was detected.	3.62 - 3.95×10^9 Ω·m	

Service Temperature	Maximum	+80 °C
	Minimum	-40 °C
	Short-term maximum	+150 °C

Compressive Stiffness	Load deflection diagram 1000 × 180 × 25 mm	Test specimen dimensions (pure material value measured without rail)	(DIN 45673-1)
	(78 ± 7.8) kN/mm/m	Static bedding factor, determined as per the secant method between 8 kN and 32 kN	

APPLICATION INFORMATION

Mixing Ratio

Part A : Part B by weight	5.80 : 1
Part A : Part B by volume	7.69 : 1

Consumption

0.9 kg/L

Layer Thickness

Minimum	15 mm
Maximum	60 mm

Product Temperature

Condition product parts at +15 °C before application to assist with flow and curing speed

Ambient Air Temperature

Maximum	+35 °C
Minimum	+5 °C

Relative Air Humidity

90 % maximum

Substrate Temperature

Maximum	+35 °C
Minimum	+5 °C

Substrate Moisture Content

Dry to matt damp

Pot Life

15 minutes at +20 °C
After this time, the mixture becomes unuseable for application.
Higher temperatures will shorten pot life.

Curing Time

Tack-free	2 hours at +20 °C
Trafficable	2 hours at +20 °C

Curing Rate

SHORE A VALUE AT THE FOLLOWING CURING TEMPERATURES AND TIMES:

Curing Time	5 °C	23 °C	35 °C
1 hour	-	23	37
2 hours	17	35	43
4 hours	30	40	46
6 hours	36	42	47
8 hours	38	44	48
24 hours	44	45	48
48 hours	45	47	48

Waiting Time / Overcoating

Waiting time for applying the Product on primer or coating at +20 °C:

Product	Minimum	Maximum
Sika® Primer-115	0.5 hours	3 days
Sikadur®-32+	24 hours	7 days

SYSTEM INFORMATION

System Structure

System products:
- Sika® Icosit® KC 350/45
- Sikadur®-32+ for steel surfaces and green concrete
- Sika® Primer-115 for dry and matt damp mature concrete

BASIS OF PRODUCT DATA

All technical data stated in this Product Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

ECOLOGY, HEALTH AND SAFETY

User must read the most recent corresponding Safety Data Sheets (SDS) before using any products. The SDS provides information and advice on the safe handling, storage and disposal of chemical products and contains physical, ecological, toxicological and other safety-related data.

APPLICATION INSTRUCTIONS

SUBSTRATE PREPARATION

GREEN CONCRETE, MINIMUM 1 DAY OLD
Preconditions
The designed concrete class according to EN 206+A1:2016–12 must be at least C30/37.
The water/cement ratio of the designed concrete must be ≤ 0.50.
The concrete surface must not have a shiny layer of water on top, but may be locally dry or matt damp substrate.
The substrate must be solid, rough and clean: the concrete surface should be free from loose particles, dust, cement laitance, oil stains, grease and other contaminants.

1. In order to remove cement laitance from the concrete surface, brush the surface with stiff bristle brushes. The brushing process should begin as early as possible (when is possible to step onto the surface of the hardening concrete), usually about 6–8 hours after mixing the concrete mixture.
2. Remove any standing water by vacuum extraction or oil-free compressed air. A matt damp substrate is acceptable.
3. Apply Sikadur®-32+ with a consumption of approx. 0.75 kg/m².
4. Immediately broadcast the freshly coated surfaces with quartz sand 0.4–0.7 mm with a consumption of approx. 2 kg/m².
5. Apply the Product after a waiting time of minimum 24 hours to maximum 7 days, to a layer thickness of 15–60 mm.

MATURE CONCRETE, MINIMUM 14 DAYS OLD
Preconditions
The pull-off strength of the concrete substrate must be at least 1.5 MPa.
It must have no visible traces of moisture and no darkening caused by moisture.
The substrate must be solid, rough and clean: the concrete surface should be free from loose particles, dust, cement laitance, oil stains, grease and other contaminants.

1. Prepare the concrete substrate mechanically using suitable abrasive blast cleaning or planing/scarifying equipment to remove cement laitance and achieve an open-textured gripping surface.
2. Remove high spots by grinding.
3. Completely remove all dust, loose and friable material from all surfaces, preferably by using vacuum extraction equipment.
4. Apply Sika® Primer-115 with a consumption of approx. 0.2 kg/m².
5. Immediately broadcast the freshly coated surfaces with quartz sand 0.4–0.7 mm with a consumption of approx. 2 kg/m².
6. Apply the Product after a waiting time of minimum 0.5 hours to maximum 3 days to a layer thickness of 15–60 mm.

STEEL

1. Prepare steel substrates mechanically using suitable abrasive blast cleaning to remove all corrosion and to achieve a bright metal finish.
2. Completely remove all dust, loose and friable material from all surfaces, preferably by using vacuum extraction equipment.
3. Apply Sikadur®-32+ with a consumption of approx. 0.75 kg/m².
4. Immediately broadcast the freshly coated surfaces with quartz sand 0.4–0.7 mm with a consumption of approx. 2 kg/m².
5. Apply the Product after a waiting time of minimum 24 hours to maximum 7 days to a layer thickness of 15–60 mm.

MIXING

The Product is supplied in pre-weighed composite units consisting of parts A+B.
Do not add any solvents to the Product.
10 KG UNITS

1. Use an electric or pneumatic mixer with spiral or basket stirrer, diameter 140 mm, speed 600–800 rpm.
2. Stir Part A thoroughly until the material is completely homogeneous for at least 30 seconds in the original container.
3. Add Part B and mix for a further 120–140 seconds. Note Ensure the material from the container walls and the base is also mixed in.
4. Stop mixing and scrape down the sides and bottom of the mixing container with a flat or straight edge trowel.
5. Mix again for a further 20–30 seconds until the Product is homogeneous.

187.6 KG UNITS
Contact Sika Technical Services for information about suitable mixing machines.

- Large volumes of the Product can be mixed and applied with special two-part casting machines, which both mix and pump the material.
- Large volumes of the Product can also be mixed using geared mixers, and application is performed separately.
  A suitable geared mixer is the GRS 300/1,5 from Geppert Rührtechnik GmbH, equipped with three blades Ø 300 mm. Refer to the equipment supplier's instruction manual. Mount the agitator shaft on a drum lid which replaces the original lid during stirring. Stir Part A thoroughly, then add Part B and stir for approx. 5 minutes.

APPLICATION

To achieve the optimum flow performance, condition the material to a temperature of +15 °C before application.
The Product is suitable for application with special two-part casting machines, which both mix and pump the material. In this case, part A must be stirred at regular intervals. Refer to the equipment supplier's instruction manual.

CLEANING OF TOOLS

Sweep excess grout into appropriate containers for disposal before it has hardened. Dispose of in accordance with applicable local regulations.
Clean all tools and application equipment with Sika® Colma Cleaner at regular intervals and immediately after use. Hardened material can only be removed mechanically.

LOCAL RESTRICTIONS

Please note that as a result of specific local regulations the performance of this product may vary from country to country. Please consult the local Product Data Sheet for the exact description of the application fields.

LEGAL NOTES

The information, and, in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with Sika's recommendations. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. The user of the product must test the product's suitability for the intended application and purpose. Sika reserves the right to change the properties of its products. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request.

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