Construction

Icosit ® KC 340/4

2-pack Polyurethane grout for rail fixing

Product description

Icosit KC 340/4 is a flexible two-component polymer grout based on polyurethane resin.

Uses

- Icosit KC 340/4 is designed as vibration absorbing, flexible grout for load-bearing undersealing layers in precision alignment of rails, turnouts/switches etc., for fixing track components to rigid substrates such as concrete slabs, steel bridge decks and in tunnels. Primarily used as noise and vibration reducing grout under discrete or continuous baseplates of LRT track sections.

Characteristics / advantages

- Reduces vibration
- Excellent electrical insulation against stray currents
- Levels out tolerances
- Suitable as powerful, shear-resistant adhesive for rail fixing (prevents underflow of water and may reduce or eliminate the need for anchor bolts)
- Insensitive to moisture
- Elastic (shore A 55) - compressible
- Long life expectance

Product data

Colour shade

Black

Packaging

component A	2,7 kg cartridge/tube	9,1 kg pail
component B	0,3 kg tin	0,9 kg tin
A + B	3 kg	10 kg

Conditions of storage / shelf life

12 months (3 kg cartridges 6 months) from date of manufacture in cool and dry storage in unopened original containers, protected from direct sun radiation, at temperatures between +10 °C and +25 °C. Protect from frost.

Cartridges should be transported and stored in an upright position!

Technical Data

Chemical base 2-component polyurethane grout

Density

Component A	~ 1,0 kg/l	(ISO 2811-1)
Component B	~ 1.23 kg/l	(ISO 2811-1)
A + B	~ 1,0 kg/l	(ISO 1183-1)

Viscosity

Component A	~ 4,0 Pa s	with Z 3 DIN, 20°C
Component B	~ 0,26 Pa s	with Z 3 DIN, 20°C

Layer thickness minimum 15 mm

maximum 60 mm

Temperature resistance from -40°C to +80°C (temporary up to +150 °C)

Modulus of elasticity Static 90 N/mm², dynamic 35 N/mm², tested at frequencies from 1 to 100 Hz

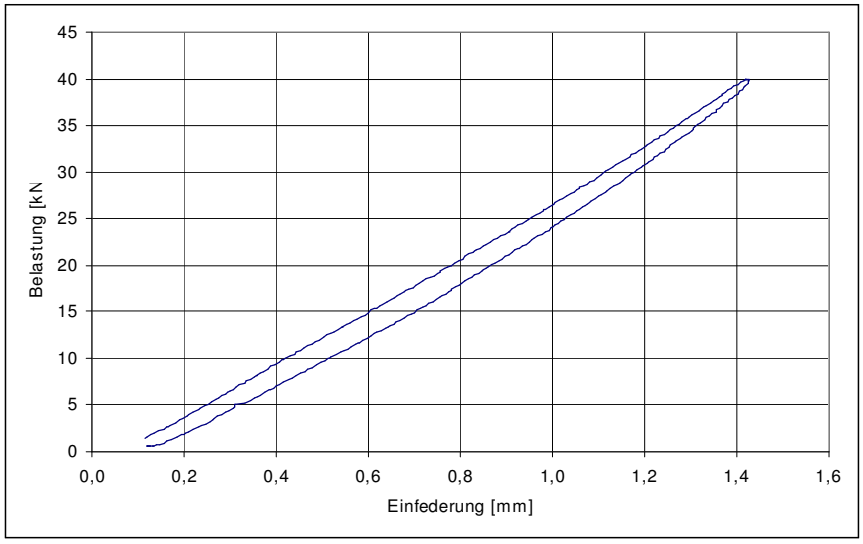
Tensile strength 2,6 N/mm^2 (ISO 527)

Shore A hardness 55 ± 5 (after 28 days) (ISO 868)

Elongation at break ~ 140% (ISO 527)

Specific electrical resistance ~ 1,22 x 10^9 Ω m (DIN VDE 0100-610 and IEC 93)

Spring diagram DIN 45673-1



”Belastung” = load [kN]; “Einfederung” = deflection [mm]

Static stiffness analogous to DIN 45673-1. Dimensions of test specimen 360 x 160 x 25 mm;

Spring index c = 29 kN/mm, determined as per the secant method between 8 and 32 kN.

Shore hardness serves for material identification and control of curing progress on site.

Chemical resistance	*Long-term resistant against:* - Water - Most detergents - Sea water *Temporary resistant against:* - Mineral oils, Diesel fuel *Not or only short-term resistant against:* - Organic solvents (ester, ketone , aromates) and alcohol - Concentrated acids and lyes *For more details contact our technical service centre.*
Consumption	1,0 kg per litre of volume to be sealed
Substrate quality	Substrate must be solid, free from oil, fat, loose and friable particles. Slightly damp substrates are acceptable. Water in liquid form (droplets) must be removed (e.g. by vacuum or compressed air) before pouring Icosit KC 340/4.
Substrate preparation	**Icosit KC 330 Primer:** To improve adhesion, absorbent substrates (concrete) should be primed. Waiting time between application of Icosit KC 330 Primer and pouring of Icosit KC 340/4 min. 1 hour and max. 3 days. **SikaCor 277** (formerly Icosit 277)**:** If a waiting time of more than 3 days is to be expected between priming and pouring Icosit KC 340/4 or if a solvent-free primer or an efficient corrosion protection is required, SikaCor 277 shall be used for priming. The freshly applied coating should immediately be blinded (broadcasted) with quartz sand 0,4 – 0,7 mm granulometry. Waiting time between application of SikaCor 277 and Icosit KC 340/4 minimum 24 hours. See individual data sheets for these products.!

Application conditions

Material temperature	Before application preferably approx. +15° C
Substrate temperature	+5°C min. / +35°C max.
Ambient temperature	+5°C min. / +35°C max.
Substrate humidity	Dry to mat-damp
Relative air humidity	90% max.

Application hints

Application methods / tools	Mixing proportion component A : component B = 100 : 10 (parts by weight) Icosit KC 340/4 is supplied in pre-weighed composite units consisting of A + B component. Component A must be stirred up thoroughly before being mixed with component B. Whilst mixing, observe the following instructions: 1. electric or pneumatic stirrer, approx. 600-800 rpm 2. mixing time approx. 60 to 80 seconds 3. make sure to properly reach walls and bottom of container. For 10 kg units, we recommend mixer CX 40 stirrer WK 140 of Messrs. Collomix or mixer MXP 1000 EQ with stirrer HS 2, 140 x 160, of Messrs. PROTOOL. For application of the 3 kg cartridges, we can supply the following equipment: Stirring rod No. 207 **(compulsory)** Cartridge holder 252 **(compulsory)** Pneumatic injection gun 251 (strongly recommended). Needs compressor with rating of 150 to 200 litres/minute, operating pressure 4 bar (58 p.s.i.) Electric timer

Application technique for direct (sleeperless) fixation of trackwork (discrete fixation):

1. Adjust rail to correct line and level
2. Drill holes to accommodate anchor bolts (normally 2 per baseplate, diagonally placed)
3. Apply Icosit KC 330 Primer (or Icosit 277 respectively)
4. Fix baseplates loosely to rail foot
5. Fill bolt holes with pourable epoxy grout, consisting of 1 part by weight Icosit KC 220/TX and 1 part by weight dry quartz sand of 0.4 – 0.7 mm granulometry. Place pre-assembled anchor bolts.
6. Fit shuttering frame (formwork) treated with release agent.
7. Mix Icosit KC 340/4 as described above and replace nozzle which has previously been cut to a suitable size. Extrude air by pushing the cartridge bottom (piston) upwards by suitable means (e.g. timber 6 x 6 cm, 10 – 15 cm long)
8. Inject Icosit KC 340/4 between baseplate and substrate.
9. After a waiting time of approx. 4 hours, the formwork can be removed.

Cleaning of tools

Mixing and application tools must be cleaned at regular intervals and immediately after use with Cleaner 5. Cured material can only be removed mechanically..

Potlife

Approx. 11 minutes at + 20°C (68°F)

After this time, the mixture becomes unserviceable.

Do not add any solvents!

Higher temperatures will shorten potlife!.

Waiting time

Tack-free after approx. 2 hours at + 20°C (68°F)

Traffickable after approx. 12 hours at + 20 °C (68°F)

Please observe:

For easier application, we recommend a material temperature of +15°C.

Undersealing layer thickness should be minimum 15 mm and maximum 60 mm.

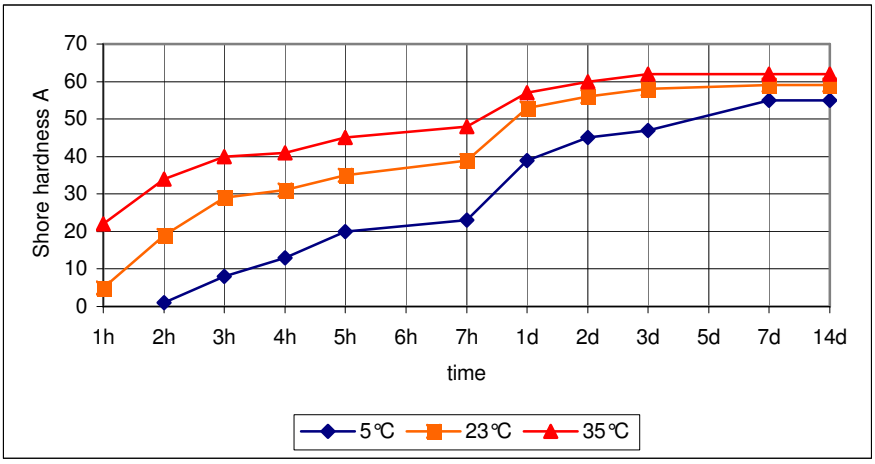
To achieve maximum adhesion on concrete, loose particles and cement laitance must be removed mechanically, e.g. by blastcleaning or scabbling.

Substrate may be damp. Droplets of water have to be removed before application of Icosit KC 340/4, e.g. by compressed air.

Use of appropriate Sika Primers will improve adhesion considerably.

Rail baseplates should be undersealed by injection from 3 kg cartridges/tubes.

Curing progress



Value Base

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.

Construction

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.

Health and Safety Information

Components A + B of Icosit KC 340/4 are solvent-free. Component A falls under UN No. 3082, class 9 of the IMDG/IATA DGR transport regulations and is classified as “irritating” Component B is classified as “harmful”. Local regulations as well as health and safety advice on containers must be observed.

Component B of Icosit KC 340/4 contains Isocyanate.

Isocyanate containing material may cause irritation and – under permanent exposure – sensitization of skin, eyes and respiratory tract and may also lead to allergic reactions. Allergic persons and persons tending to illness of respiratory tract should not come into contact with this kind of materials. Therefore avoid direct contact with the liquid components (chemical resistant gloves/goggles/clothing) to prevent direct contact with skin and eyes. Use only in presence of adequate general and local exhaust ventilation to prevent concentration of vapours. Use properly fitted NIOSH respirator if ventilation is poor. Cured product (as combined with companion component) is chemically inert but very difficult to remove from skin or any objects to which it adheres. Cured product must be mechanically removed. In case of spill, avoid direct contact. Wearing protective equipment, contain and collect spill with absorbent material and place in suitable container. Ventilate enclosed area. Do not dispose of in sewer or drain. Dispose of spilled or excess product and container in accordance with applicable federal, state and local environmental regulations.

Prior to as well as after application use fat-free barrier cream. After completion of work clean skin with plenty of soap and water and again protect with fat-containing barrier cream.
For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent Material Safety Data Sheet containing physical, ecological, toxicological and other safety-related data.

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

Sika Deutschland GmbH
Kornwestheimer Str. 107
D-70439 Stuttgart/Germany
Telephone +49 711 8009 0
Telefax +49 711 8009 321

Sika Deutschland GmbH
Stuttgarter Str. 117
D-72574 Bad Urach
Phone +49 7125 940 0
Telefax +49 7125 940 321