



FLEXIBLE RAIL FIXING

BUILDING TRUST





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BENEFITS OF ELASTIC BONDING

ONE OF THE CENTRAL REQUIREMENTS OF TRACK CONSTRUCTION is reducing vibration and noise. Our innovative systems accomplish these reductions through flexibility and volume compressibility of the embedding material.

Environmental reasons and traffic reduction are the main forces causing urban planners in expanding public transport. An efficient way of expanding transportation is by building infrastructures of trams and light-rail vehicles.

WHETHER THE APPLICATION OF CONTINUOUS RAIL GROUTING, THE DISCRETE/DIRECT FIXATION OF RAILS, LAWN TRACK DESIGNS OR CUSTOM APPLICATIONS - THE ICOSIT® KC RANGE IS A FLEXIBLE SYSTEM DESIGNED FOR EVERY APPLICATION.

Product	Usage	Characteristics
Icosit® KC 340/35	Elastic, continuous rail grout for embedded & road crossing applications	For light axle loads and high deflection
Icosit® KC 340/45	Elastic, continuous rail grout for embedded & road crossing applications	For medium axle loads and standard deflection
Icosit® KC 340/65	Elastic, continuous rail grout for embedded & road crossing applications	For heavy axle loads and standard deflection
Icosit® KC 340/4	Elastic grouting of base plates at the base mounting for track construction	For medium axle loads of trams and light-rail vehicles
Icosit® KC 340/7	Elastic grouting of base plates at the base mounting for track construction	For heavy axle loads
Icosit® KC 330/10	Hard elastic grouting of base plates	For track construction for heavy axle loads of main-line rail, loading cranes, container cranes and factory rail tracks.
Icosit® KC 220/60 TX	Adhering anchor bolts	For pressure and wear resistant lining of anchor bolts for base plates

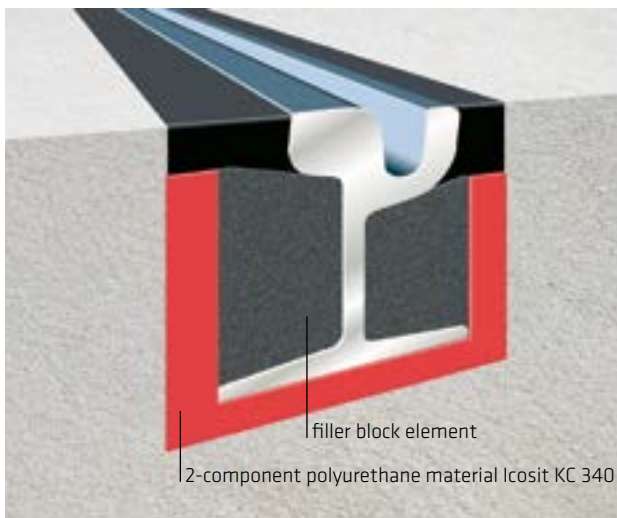
PROVEN IN-FIELD SERVICE – CONTINUOUS BEDDING OF RAILS

STRONG ENGINES AND REGENERATIVE BRAKING SYSTEMS, modern rail vehicles are becoming more comfortable and fast. However, they also have a high return current which increases the risk of stray current corrosion and signal interference.

Icosit® KC 340 fulfils the latest regulations as per EN 50122-2 regarding insulation against electrical current leakage. Application of Icosit® KC 340 is largely independent of weather conditions as it can also tolerate damp substrates/extreme temperatures, etc.

BENEFITS:

- Saves installation time due to short cure time
- Saves money due shorter path interruption, faster installation, long-term maintenance cost reductions, etc.
- Successful in-field service for over 30 years



Continuous grooved rail storage with cavity filling.

THE PRODUCT ADVANTAGES:

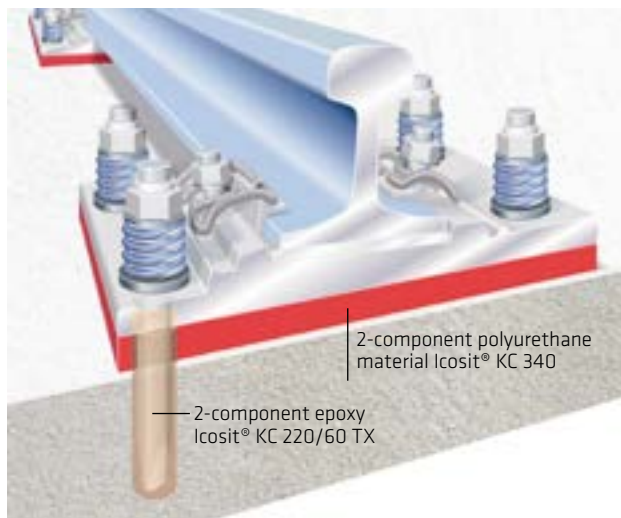
- Flexible, elastic, tolerance-compensating
- Dampening, volume compressible, vibration resistant
- Moisture resistant, no water absorption, frost resistant
- Protect against stray current corrosion
- Permanent bonding of rail, concrete and base plates
- Reduction of mechanical wear on vehicles and rail
- Continuous alignment of the track geometry



DISCRETE/DIRECT FIXATION OF RAILS

THE VARIOUS GRADES OF THE ICOSIT® KC 340 SERIES ARE IN-FIELD SERVICE-PROVEN for more than 3 decades. Maximum adhesion between concrete and steel ensures a high additional safety margin.

Discrete/direct fixations with Icosit® KC 340 permit lighter and thus cost-saving bridge structures, compared to conventional ballast and most ballastless rail fixing systems. In tunnels, slabtrack using Icosit® KC 340 permits reduction of construction height or increases clearance lost by installation of overhead power supply in refurbishment of old tunnels. The various grades of Icosit® KC 340 ensure flexible bedding for any axle load and permit maximum precision of alignment by top-down construction.



On the discrete fixation of rails the single fixations will be fixed by anchor bolts and stored on Icosit® KC.

BENEFITS:

- Saves installation time due to short cure time
- Saves money due shorter path interruption, faster installation, long-term maintenance cost reductions, etc.
- Successful in-field service for over 30 years

THE PRODUCT ADVANTAGES:

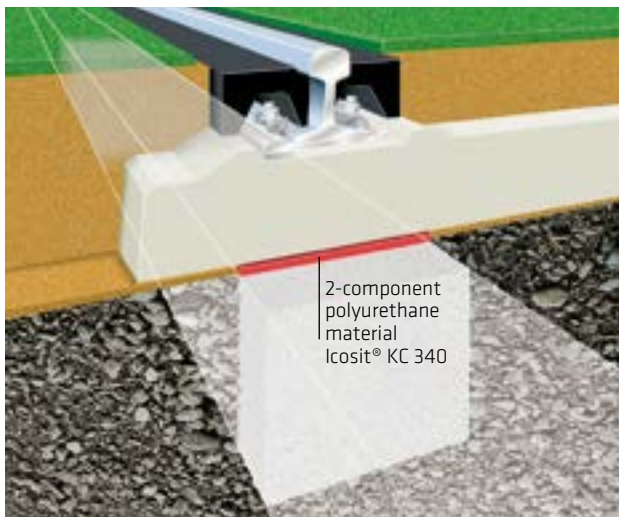
- Flexible, elastic, tolerance-compensating
- Dampening, volume compressible, vibration resistant
- Moisture resistant, no water absorption, frost resistant
- Protect against stray current corrosion
- Permanent bonding of rail, concrete and base plates
- Reduction of mechanical wear on vehicles and rail
- Continuous alignment of the track geometry
- More uniform load distribution on the ground
- No corrosion of the base plate and no erosion of concrete by water penetration
- Durability, low maintenance



LAWN TRACK DESIGNS - THE “GREEN ALTERNATIVE”

TOWN PLANNERS PREFER TO segregate rail from road traffic to shorten transit times and to reduce risk of accidents. To reduce the environmental impact of the trackwork, lawn track designs have become very popular.

Lawn track designs with Icosit® KC 340 reduce structural borne and airborne sound while still maintaining efficient insulation against seepage of stray currents. These designs are virtually maintenance free and modern design techniques enable their cost of construction to be similar to that of conventional ballasted track.



Bremer green track.

BENEFITS:

- The sustainable solution for ecological construction

THE PRODUCT ADVANTAGES:

- Less emission of airborne sound
- Aesthetically pleasing design
- Ecological and sustainable
- Protection against stray current corrosion
- Durability, low maintenance



CUSTOM APPLICATIONS

TRACKS FOR HEAVY GANTRY CRANES can be exposed to extreme wheel loads of up to 50 tons per wheel often resulting in failure of cementitious grouts and sometimes even epoxy grouts. The tough-elastic grades of the Icosit® KC series flex under wheel loads, thus distributing the load over a wider surface area and consequently avoiding damage.

Resilient grouts of the Icosit® KC 330 series are also successfully employed for undersealing central ball bearings of bucket wheel reclaimers as well as rails in automated warehouses.

BENEFITS:

- Safe and durable

THE PRODUCT ADVANTAGES:

- For heavy loads
- Insensitive to vibrations



CERTIFIED QUALITY PROVIDES SECURITY

BEFORE BEING RELEASED, the products of the Icosit® KC series have to undergo extensive in-house testing using sophisticated equipment under realistic conditions.

In addition to that, large scale field tests are complemented by independent third party testing facilities e.g. The Technical University of Munich, The University of Calgary/Canada, AEA Rail Technology in the UK, the University of Louvain/Belgium, the University of Győr/Hungary and many others. German Railways (DB) ranking Sika as „Q1“ = top quality supplier. Many other railway authorities also rely also on the approved track fixing designs with flexible grouts of the Icosit® KC series.

To supplement test reports with long-term in-field experience, a perfectly intact 28 year old discrete/direct fixation with Icosit® KC grout was removed from Heinrichsheim bridge in Bavaria. The Technical University of Munich subsequently produced a Load deflection (spring) diagram. Comparison with the corresponding diagram from the quality control at the time of installation in 1971 only showed a loss of flexibility of 6% after 28 years- proof of outstanding longevity!



Research report of TU Munich



Tensile test



Discrete/Direct fixation test

SIKA FULL RANGE SOLUTIONS FOR CONSTRUCTION:



WATERPROOFING



CONCRETE



REFURBISHMENT



MERCHANT



SEALING AND BONDING



FLOORING



ROOFING



INDUSTRY

FOR MORE INFORMATION:



WHO WE ARE

Sika Limited and Sika Ireland Limited are part of the global Sika Group, specialising in the manufacture and supply of chemical based products. Sika have a leading position in the development and production of systems and products for bonding, sealing, damping, reinforcing, and protecting in the building sector and the motor vehicle industry. Sika has subsidiaries in 93 countries around the world and manufactures in over 170 factories. With approximately 17,000 employees Sika generates annual sales of CHF 5.49 billion (£3.98bn). We are also committed to providing quality, service, safety and environmental care.

In the UK and Ireland, we provide market-leading solutions for concrete, waterproofing, roofing, flooring, refurbishment, sealing & bonding, and industry, and have manufacturing sites in Welwyn Garden City, Preston, Leeds and Dublin with more than 700 employees and a turnover of more than £130 million.

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 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 proprietary rights of third parties must be observed. Please refer to our homepage www.sika.co.uk for our current standard terms & conditions applicable to all orders. Users should always refer to the most recent issue of the Product Data Sheet for the product concerned, copies of which will be supplied on request.



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