



SIKA AT WORK

MODERNIZATION OF THE TRAM TRACK
WITH THE TRACTION NETWORK AND
ACCOMPANYING INFRASTRUCTURE
ON THE CHEBZIE LOOP, RUDA SLASKA

SIKA TECHNOLOGIES: RAILFIXING: SIKA® ICOSIT® KC SYSTEM,
GROUTING MORTAR SIKAGROUT®-4 R

contrack

POWERED BY



MODERNIZATION OF THE TRAM TRACK WITH THE TRACTION NETWORK AND ACCOMPANYING INFRASTRUCTURE ON THE CHEBZIE LOOP, RUDA SLASKA

DESCRIPTION

The modernization of the tram track with the traction network and accompanying infrastructure on the Chebzie Loop in Ruda Slaska is a part of the “Integrated Project for the Modernization and Development of Tram Infrastructure in the Silesian-Dabrowa Agglomeration along with the Purchase of Tram Rolling Stock” co-financed by the European Union. The task included a comprehensive reconstruction of the Chebzie loop up to the sections modernized during previous investments. Thanks to this project, passengers using this transport hub have gained a new quality of travel. A total of approx. 1,350 meters of single track was rebuilt, the majority of which consisted of classic track on prestressed concrete sleepers. On road-track crossings and pedestrian crossings, prefabricated track slabs with elastic grout rail fastening was used.

Source: Tramwaje Śląskie S.A.

PROJECT REQUIREMENTS

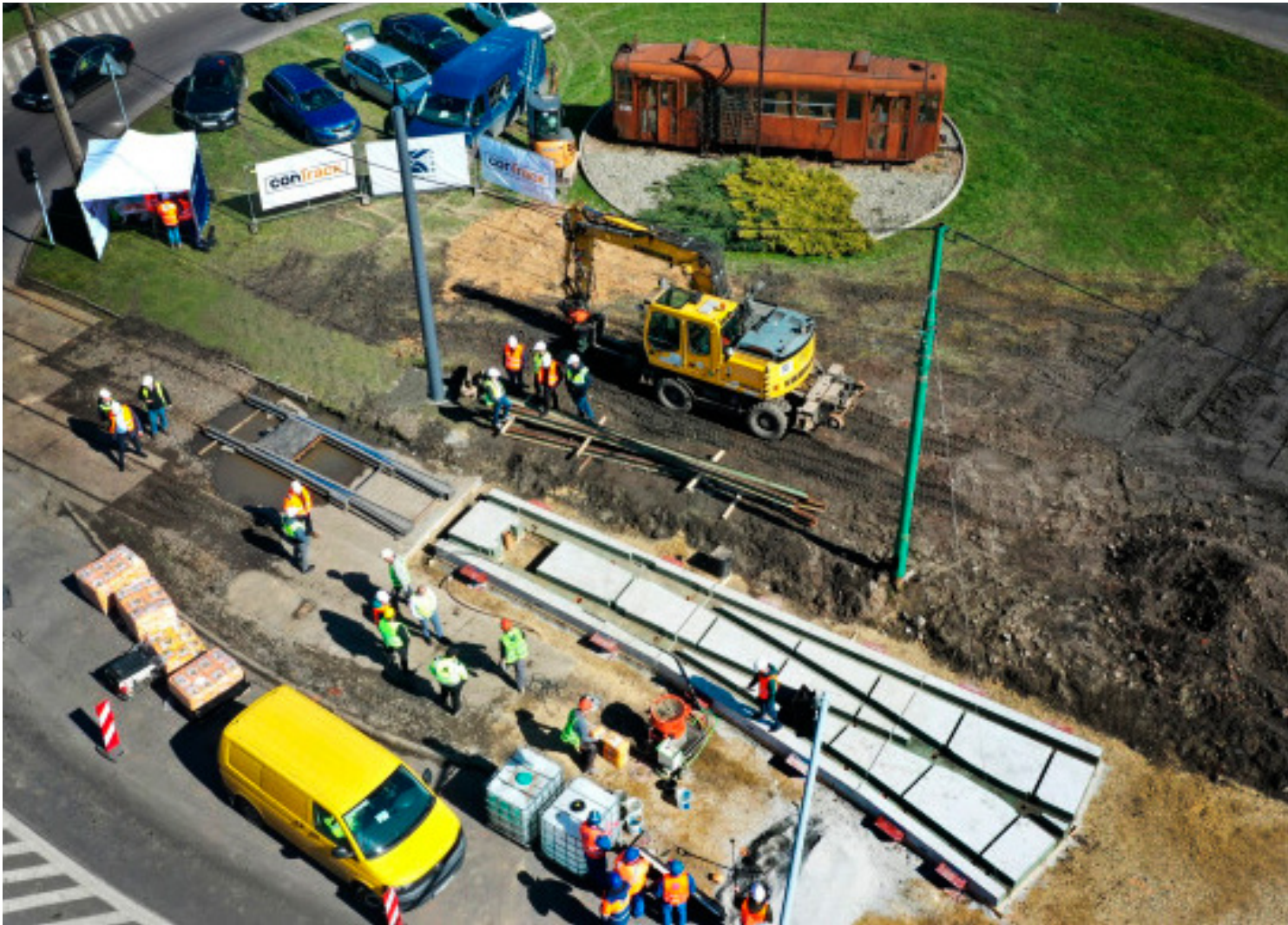
The renovation works require particular attention at the planning and design stage to minimize disruptions to tram and road traffic, reduce environmental impact, and ensure long-term infrastructure durability. The task at this stage included the construction of about 80 meters of a single track in point-grouting technology and the replacement of a road-track turnout. To enable quick completion of the turnout reconstruction work, the innovative CONTRACK prefabricated turnout plate technology was used. The scope of the project included demolition of existing structure, preparation of the subgrade, setting of prefabricated slabs in the plan and profile, grouting with early, high strength mortar, priming, assembly and welding of rails and turnouts, application of elastic polyurethane materials for fixing rails and filling joints between the slabs, as well as performing any additional works related to the reconstruction.



SIKA SOLUTIONS

The use of innovative CONTRACK technology required precise preparation. Each slab was individually designed for tracks geometry, curves and turnouts, and then made in a precast concrete plant. The project uses 3 prefabricated slabs with a total area of about 40 m². Prefabricated modules include not only reinforced concrete slab and steel track structure, but also full equipment – including sensors, drainage, switch drives and heating systems. The next stage of the preparatory work was a trial assembly, carried out at the KZN plant in a scale of 1:1, using a modular system specially developed for this investment. Then, the finished elements were transported from the siding of the production plant in Krakow to the installation site and assembled within a few hours. This precise preparation and trial assembly ensured safe and efficient execution of subsequent works. To meet the schedule, all materials used had to allow fast and easy application and rapid achievement of required properties. After positioning the slabs in the plan and profile, grouting with a high-strength mortar **SikaGrout®-4R** was made. SikaGrout®-4R is a ready-to-use, expansive, shrinkage compensating, self-levelling cement mortar with 0/4 mm

grain size, with high strength and resistance to vibration and impact after curing. For rail fixing and joint sealing, the proven **Sika® Icosit® KC** system was applied, ensuring durability and tightness. It consists of: Sika® Icosit® KC 340/45 a flexible material based on polyurethanes with high elastic recovery, characterized by excellent insulation properties, eliminating the formation of stray currents and thus corrosion of steel elements located nearby. Sika® Icosit® KC 340/45 reduces secondary noise and absorbs vibration. It is designed for both manual and machine application, which allows for significant acceleration of work and obtaining the highest quality. 1-component polyurethane primer **Sika® Icosit KC-330 Primer** is used to prepare the substrate and improve adhesion. Rails and rail channels before bonding the filler blocks with **Sika® Icosit® KC 330 FK**, was primed with the epoxy resin **Sikadur®-53**. CONTRACK technology sets new standards for tram track construction in Poland and Europe, enabling fast and efficient modernization with minimal environmental impact while ensuring long-term durability through high-quality materials and precision workmanship.





PROJECT PARTICIPANTS

Owner: Tramwaje Śląskie S.A.
Investor: Tramwaje Śląskie S.A.
Contractor: „NJN” Damian Kłosek
Sika Poland: Tomasz Wesołowski

The sale in which the selling party is Sika-Poland Sp. z o.o. with headquarters in Warsaw, it is implemented in accordance with the currently applicable General Terms of Sales of Sika (abbreviated OWS), defining rights and obligations Sika sales contracts. Before using the materials it is necessary seek information available in current Product Data Sheet.



SIKA POLAND SP. Z O.O.
ul. Karczkowska 89
02-871 Warszawa

Contact
Tel: +48 22 27 28 700
sika.poland@pl.sika.com
www.sika.pl

