



SIKA AT WORK

RENOVATION OF ROAD-TRACK CROSSINGS ON TARNOGAJSKA STREET, WROCLAW

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



RENOVATION OF ROAD-TRACK CROSSINGS ON TARNOGAJSKA STREET, WROCLAW

DESCRIPTION

The renovation of the tram track curves at the intersections of Tarnogajska Street with Armii Krajowej Avenue and Klimasa Street in Wrocław included, among others, modernization of road and track crossings, reconstruction of stop platforms and refurbishment of pedestrian and bicycle crossings. The works were synchronized with the construction activities on Bardzka Street to avoid multiple tram traffic shutdowns within the same area of the city. Thanks to the work carried out, drivers and passengers gained modern, comfortable platforms with new equipment, renovated pedestrian and bicycle crossings, and improved safety and traffic flow along the entire communication route. *Source: MPK Wrocław*

PROJECT REQUIREMENTS

The renovation works carried out in large urban areas required special attention during planning and design, to minimize disruptions for both tram and road traffic and to reduce them to the shortest possible duration. To make this feasible, the works were executed using the innovative CONTRACK prefabricated turnout slabs technology. 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 maximum acceleration of work and reduction of traffic disruptions during the replacement of road crossing in Wrocław were possible thanks to the innovative technology of prefabricated turnout slabs CONTRACK. 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 used 12 prefabricated slabs with a total area of about 250 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 Wrocław and assembled on the construction site 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. 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**. The use of innovative CONTRACK technology significantly reduced reconstruction time, allowing the works to be completed three months ahead of schedule, while minimizing the environmental and operational impact of the renovation. 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: MPK Sp. z o.o. Wrocław
Investor: MPK Sp. z o.o. Wrocław
Contractor: KZN RAIL Sp. z o.o.
Sika Poland: Wiktor Karpala

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