



SIKA AT WORK

MODERNIZATION OF THE ROAD CROSSING
WITHIN THE TRAM TRACK AT THE
INTERSECTION OF POWSTANCOW SLASKICH
AND JASTRZEBIA STREETS, WROCLAW

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

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MODERNIZATION OF THE ROAD CROSSING WITHIN THE TRAM TRACK AT THE INTERSECTION OF POWSTANCOW SLASKICH AND JASTRZEBIA STREETS, WROCLAW

DESCRIPTION

The replacement of a road crossing at the intersection of Powstancow Slaskich and Jastrzebia Streets in Wroclaw is part of broader modernization of the tram track, which will also include new platforms, green track and pedestrian crossing. The aim of the project is to improve traffic capacity and the aesthetics of this part of the city. The investment will enhance comfort and safety for both tram passengers and pedestrians.

PROJECT REQUIREMENTS

The renovation works carried out in a critical traffic location 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. The replacement of the road crossing was scheduled for a single weekend. 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 Wroclaw 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 6 prefabricated slabs with a total area of about 130 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 Wroclaw 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. 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**. The use of the innovative CONTRACK technology during the work shortened the intersection modernization time and limited the interruption of tram traffic to the necessary minimum. 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 Karpąła

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