



SIKA AT WORK

THE INTEGRATED TRANSPORTATION CENTER IN POZNAN

SIKA TECHNOLOGY: CONCRETE ADMIXTURES – PRECAST CONCRETE,
MODERNIZATION OF THE RAILS AND PLATFORMS

BUILDING TRUST



THE MOST IMPORTANT INVESTMENT IN POZNAN WITH SIKA TECHNOLOGIES

THE INTEGRATED TRANSPORTATION CENTER IN POZNAN is a modern complex, consists of a new railway station (PKP), a new bus station (PKS) connected with the shopping centre Poznan City Center. The whole complex was built on the site of the old railway station and its vicinity. The investment started in 2007. The first stage of the project was the modernization of the rails and platforms and the construction of a new railway station building. It was completed in May 2012 in time for UEFA Euro 2012. Finally in November 2013 an integrated transport hub and shopping centre Poznan City Center were opened. The bus station was transferred to the new bus terminal, located under the shopping centre. The realization of a such major investment required high quality materials and proven technologies.



MODERNIZATION OF THE RAILS AND PLATFORMS

SIKA SOLUTIONS

Sika solutions for elastic fixing and damping of railway have been used for the modernization of the rails and platforms (Icosit® system). The Icosit® system reduces noise and vibration, provides resistance to service loads and improves comfort and safety of the ride. The modernization also included the renovation of the platforms and execution of the deck flooring above the tunnel for pedestrians using Sikadur Combiflex® SG System and SikaCor® Elastomastic TF.



The new Integrated Transportation Center with shopping centre, multi-story parking, office and hotel facilities was built on an area of about 9 ha. Poznan City Center retail complex area is over 60,000 m².



PRECAST CONCRETE WITH SIKA CONCRETE ADMIXTURES

PROJECT REQUIREMENTS

The next step was the construction of the buildings of the railway station and shopping center Poznan City Center. Both of them required the design of the concrete mix that was used to produce the precast concrete elements. The concrete mix designs had to meet the following classes of strength and exposure:

- C30/37 XD3/XF2,
- C50/60 XD1/XF1 - two types of the mix were required - one with the accelerator for TT floor slabs (during the winter),
- C75/85 XD3/XF2 - for load-bearing columns.

SIKA SOLUTIONS - CONCRETE ADMIXTURES

The four concrete mix designs for the project were prepared with three Sika admixtures: Sika® Viscocrete® 21 ST, Sika® LPS V, Sika® Rapid 2.1.

SIKA® VISCOCRETE® 21 ST

To achieve the required high early strength and ensure the concrete quality superplasticiser Sika® Viscocrete® 21 ST combined with accelerators and stabilizers were used. Thanks to that, the precast concrete elements could be demould after 10-18 hours. The individual elements were demould after obtaining proper strength - for reinforced concrete elements required strength was about 20 MPa, for prestressed elements required strength was about 40 MPa. The time for obtaining the minimum strength was strongly dependent on the temperature that prevailed in the performance of work. In addition to this, not only did Sika® ViscoCrete® 21 ST provide relevant techno

logical parameters but also enabled to obtain a smooth surface without voids and holes, which guaranteed the excellent visual appearance

SIKA® LPS V

Sika® LPS V was used in order to air entrainment of the concrete mix, which allowed to obtain frost resistance of precast elements.

SIKA® RAPID 2.1.

Additionally, during the winter, for TT floor slabs Sika® Rapid 2.1. was used in order to shorten the time of demoulding.

The concrete with Sika admixtures were used to produce reinforced beams and columns, prestressed beams and TT floor slabs and other concrete elements.





PROJECT PARTICIPANTS

Modernization of the rails and platforms:

Investor: PKP PLK Poznań

Main contractor: FEROCO Poznań

Poznan Główny Railway Station and Poznan City Center:

Investor: TriGranit

Architects: Bose International Planning and Architecture;
Pracownia Pentagram Architekci

Precast concrete: Pekabex S. A.

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