



# SIKA AT WORK

## BRIDGE OVER THE VISTULA RIVER IN KWIDZYN

CONCRETE TECHNOLOGY: Sika® Viscocrete®, Sika® Retarder  
PROTECTIVE COATINGS: Sikagard®

BUILDING TRUST



# HIGH PERFORMANCE CONCRETE AND HYDROPHOBIC IMPREGNATION



## PROJECT DESCRIPTION

In August 2013 the largest extradosed bridge over the Vistula River was commissioned for use. This remarkable construction combines the concept of cable-stayed bridge with pre-stressed girder bridge. It is on the route of national road no. 90 and connects the town Kwidzyn and national road no. 1 on the west river bank with national road no. 55, which runs to the east of the river and leads to A1 motorway.

The bridge in Kwidzyn has a total length of 808.5 m and a maximum width of 15.9 m. Altogether with three flyovers with a total length of approx. 1 km the total length of the construction is 1867,2 m. The bridge is wide enough to accommodate two lanes of traffic and emergency lanes. The spans of the bridge are between 130 and 204 meters, which gives the longest span distance for a bridge of this type in Europe.

## PROJECT REQUIREMENTS

The prestigious project as the bridge in Kwidzyn is required a very reliable construction chemistry supplier. The main requirements of the projects were as follow:

- the bridge superstructure required durable concrete of the class C70/85 with early strength development,
- the possibility of conducting work in winter,
- hydrophobisation of the reinforced concrete surface.

Additionally, technical support during the whole project was a crucial requirement.

Our most current General Sales Conditions shall apply.  
Please consult the Data Sheet prior to any use and processing.



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## SIKA SOLUTIONS

### SIKA ADMIXTURES FOR HIGH PERFORMANCE CONCRETE

For construction elements a special concrete mix design was developed in accordance with a detailed technical specification. The designed high performance concrete was of the class C70/85 W8 F150 n<5% and was applied in the superstructure of the bridge.

The concrete mix was designed by the Concrete Technology Lab CFB (Laboratorium Technologii Betonów CFB) in Gdańsk and was achieved using Sika admixtures Sika® Viscocrete® EPL 21 and Sika® Retarder. Thanks to Sika admixtures technology, the concrete mix showed higher early and end strengths, higher freeze resistance, higher watertight properties and lower water absorption.

1200 m<sup>3</sup> of the C70/85 class concrete was produced for the needs of the project. All concrete was used for the construction of superstructure of the bridge.

### HYDROPHOBIC COATING - SIKAGARD®

Sika technology was also applied for the protection of construction surface. A silicone based water repellent impregnation, SikaGard® 702 W Aquaphob, was used to impregnate reinforced concrete surface.

## PROJECT PARTICIPANTS

**Investor:** General Directorate of National Roads and Motorways

**Architect:** Konsultacyjne Transprojekt Gdański Sp. z o.o.

**Engineer of the project:** Zakłady Budownictwa Mostowego Inwestor Zastępczy Sp. z o.o.

**Contractor:** Budimex S.A.

**Sub-contractors:** Eurobud Chajewscy Sp. J., Arwo Barlinek and Niwa Szczecin Sp z o.o.

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