

Sika at Work



Structural Strengthening

An important Russian Sika® CarboDur® Project:
Dmitrovskoye Shosse Bridge, Moscow



Case Study: An important Russian Sika® CarboDur® Project

Project

Structural Strengthening of the Moscow Channel Bridge
Built 1986 by Mostootryad - 18 (Bridge Building Department)
Length of bridge: 480 m
Width of bridge: 17 m - 3 lanes
3 V-shaped supports
Max. span width: 150 m

Problem

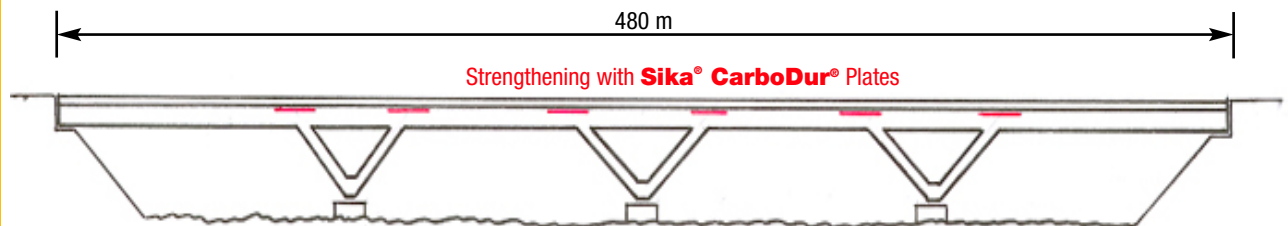
There were undesirable stresses in the structure and the bridge bearings had become damaged during use. In addition the bridge bearings had become corroded and had to be replaced. The bridge would soon be unable to accept the ever increasing loads, because there was insufficient reinforcement over the V-shaped supports.

Solution

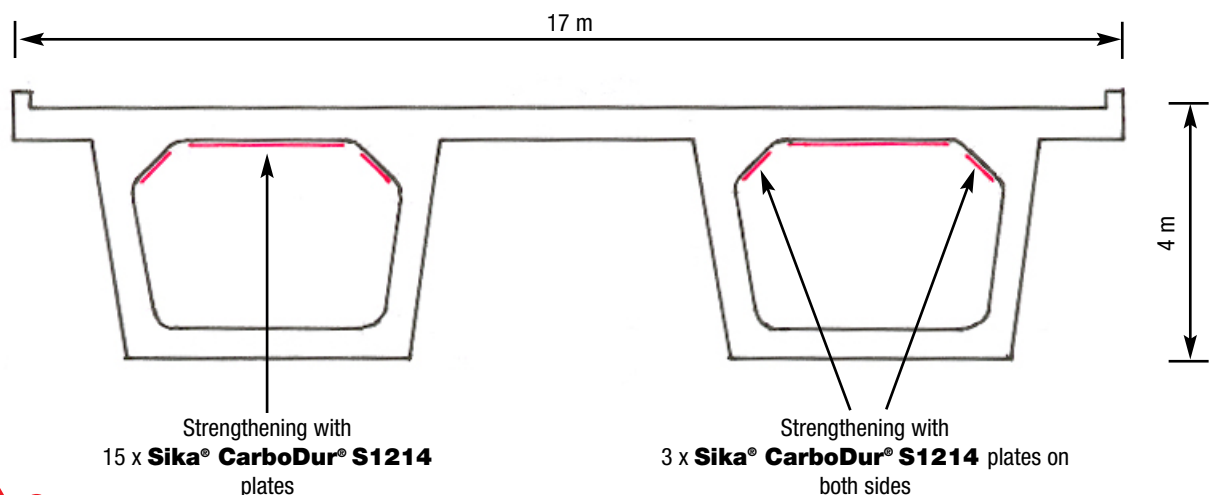
Sika Structural Strengthening Systems were used inside the concrete box sections. In the areas above the V-shaped supports **Sika® CarboDur®** CFRP plates were applied to enable the bridge to accommodate the increased negative bending moments. **SikaWrap® Hex-230C** fabrics were used to strengthen some local areas of the concrete also.



Longitudinal Section:



Cross Section:



Dmitrovskoye Shosse Bridge over the Moscow Channel

Application

- **Sikadur®-41** epoxy mortar was used to level uneven sections
- **Sika® CarboDur®** plates Type S1214 with **Sikadur®-30** epoxy adhesive were installed for the main structural strengthening works
- **SikaWrap® Hex-230 C** fabrics with **Sikadur®-330** impregnation resin were employed for local strengthening



1 Areas of uneven concrete substrate had to be reprofiled with Sikadur®-41 epoxy mortar



2 Pull-off test with steel dollies Ø 50mm



3 Preparing the Sika® CarboDur® CFRP Plates on site



4 Sikadur®-30 epoxy adhesive applied to the substrate



5 Coating the plate with Sikadur®-30 epoxy adhesive in a dome shape



6 Taking a Sika® CarboDur® plate to its position



7 Installation of the Sika® CarboDur® CFRP Plates. Pressed into position by roller



8 Finished application of the first 15 Sika® CarboDur® CFRP Plates Type S1214

Project Participants

Customer:	Federal Road Department of "Central Russia"
Contractor:	000 "Almeks Stray" - Moscow
Material supplier:	000 "Sika", Malaya Dmitrovka Str. 16, 103006 Moscow
Technical support and instruction:	Sika Services AG, Corporate Construction, CH-8048 Zürich, Switzerland

Sika Products used

Sika® CarboDur® S1214 plates	2000 m
Sikadur®-30 epoxy adhesive	4000 kg
SikaWrap® Hex-230C fabrics	75 m²
Sikadur®-330 impregnation resin	100 kg
Sikadur®-41 epoxy mortar	120 kg

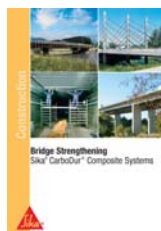
Sikadur® Adhesive



The Team



Further Sika Documentation on Structural Strengthening Systems



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