

# The S7 Expressway road section Kalsk - Miłomłyn

**KALSK - MIŁOMŁYN - POLAND**



## KEY FACTS

- 29 bridges of total concrete surface of 50 000 m<sup>2</sup> protected with MAPEI solutions
- MAPEGROUT 430 & ANTIPLUVIOL W not only complied to the Investor's demands, but also helped keep the work's completion deadline regardless of non-favorable weather conditions



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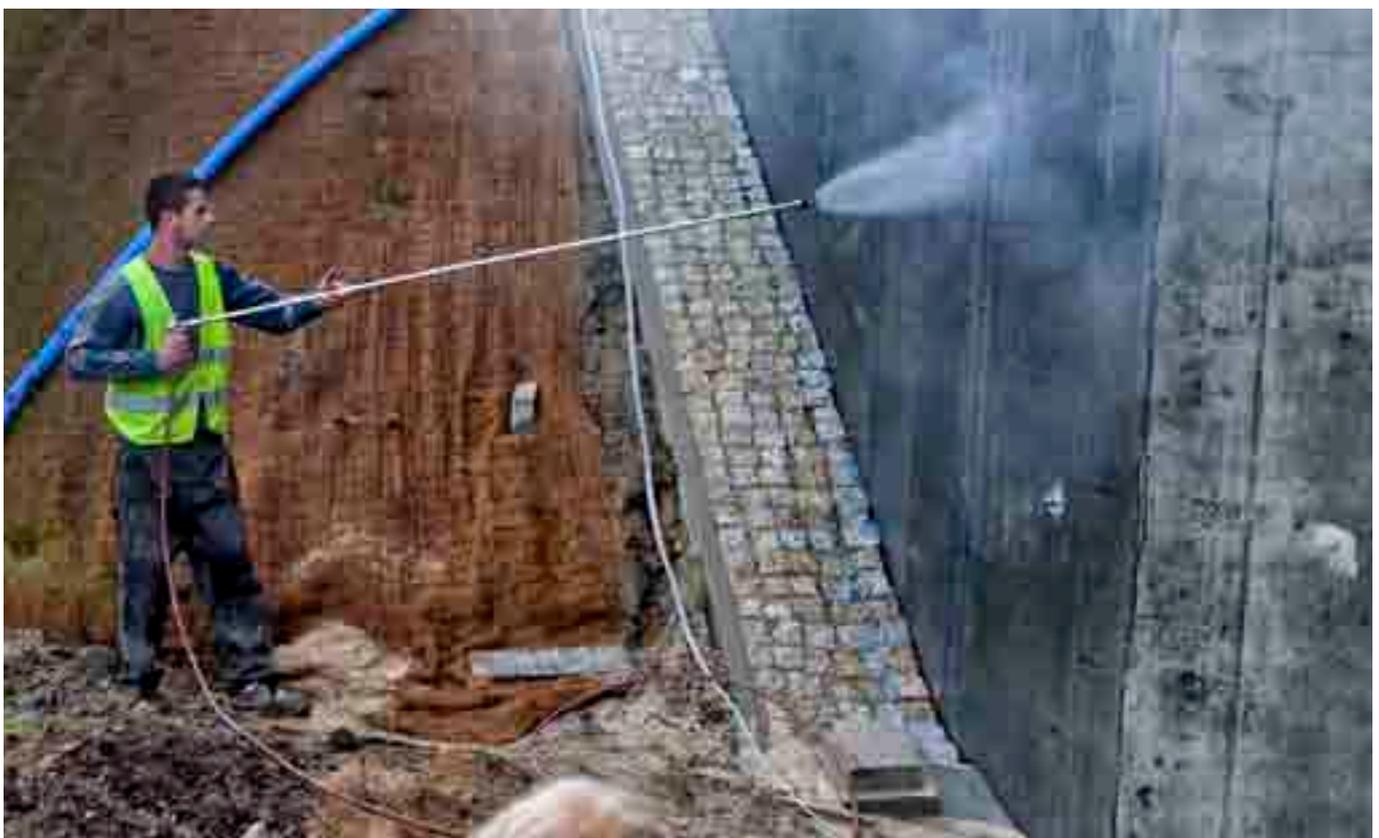
Let's present the project...

The S7 expressway, with its total 720 km length, runs between Gdańsk and Rabka, connecting the northern and southern end of Poland. This route finds its place in the Trans-European Transport Network (TEN-T) and links three urban areas (Gdańsk, Kraków and Warsaw) leading to the boarder crossing to Slovakia in Chyżne. The S7 way connects also three from the most important geographic regions of Poland - starting from the Baltic Sea, through Masurian Lake District, to the Tatra Mountains. The outermost southern section of the S7 espressway (the Kraków Opatkowice - Rabka section) consists a fragment of the popular Zakopianka route - the access road to the capital of the Tatras.

Currently, the task to complete the works on the 37 km-long section from Kalsk to Miłomłyn in the warmińsko-mazurskie voivodeship has been accomplished. The target of this investment was to adjust the existing national trunk road no. 7 to the parameters of an expressway. In the corridor of the existing no. 7 road and in the zone nearby, the new route for S7 was marked out. A two-lane expressway construction with a reserve for a third lane was carried out, along with a network of farm lanes and service roads and three interchanges (Pasłek Południe, Marzewo and Małtydy). In addition, the engineering structures allowing to pass under the new road have been constructed and the area has been prepared to host service station facilities.

...and MAPEI contribution

**During the works on this road section, to protect the 29 bridges' concrete surface of the total area reaching 50 000 m<sup>2</sup>, MAPEI solutions have been efficiently applied.**



After several attempts and tests, a repair and a transparent water - repellent treatment methods for the concrete surface have been approved. The winners were MAPEGROUT 430 and ANTIPLUVIOL W. The latter is a transparent, silane- and siloxane-based dispersing agent that penetrates the material and creates a water-repellent layer inside the pores and capillaries, forming an efficient barrier for aggressive substances from rainwater. The mentioned agent does not form a layer on the surface, therefore the substrate remains vapor-permeable and its appearance remains unchanged. ANTIPLUVIOL W is resistant to UV rays and alkali, that is why the water repellent features continue to be so long-lasting. ANTIPLUVIOL W was an ideal solution, as the Investor did not allow the use of typical concrete-protective paints, because they form a masking layer which covers potential concrete construction cracks. It demanded, however, a different approach to substrate preparation. Apart from typical procedures including the lattice removal, the repaired spots were due to obtain an identical tone with the non-repaired areas. It was the reason why only one smoothing and repairing mortar should have been used for all types of surface imperfections. For this purpose, the MAPEGROUT 430 occurred to perfectly fit the needs. This thixotropic repair mortar with compression resistance equal to 30 N/mm<sup>2</sup> is featured by synthetic fiber addition and compensated shrinkage properties. The crucial points were the performance parameters and uniform tone with the adjacent zones which did not require any treatment.

The works were due to last from September 2010 until the moment anticipated to put the investment into operation, that is until the 15<sup>th</sup> July, 2012. However, due to the bridge and road works delay caused by a changeable weather (freezing winter and rainy July), the works' completion risked to be late. **Easy and efficient repair and quick application of the water-repellent agent allowed to finish all planned works on time.** Water dispersion of the water-repellent product makes possible to perform works even in less favorable weather conditions. The agent tolerates residual humidity in the substrate and moreover, the second layer can be applied in only two hours from the first one which decreases substantially the duty cycle duration.



**MAPEI PRODUCTS:** ANTIPLUVIOL W, MAPEGROUT 430.



## TECHNICAL DATA

- **Name of building intervention:** The S7 Expressway / road section Kalsk - Miłomłyn / Poland
- **Type:** TRANSPORT (ROAD)
- **Period of construction:** 2011-2012
- **Period of MAPEI intervention:** 2012
- **Intervention by MAPEI:** renovation and protection of 50 000 m<sup>2</sup> of concrete surface of 29 S7 Expressway's bridges
- **Customer:** SYSTEM s.c.
- **General contractor:** STRABAG
- **Laying company:** POLMAR
- **Site manager:** Wojciech Zawarczyński
- **MAPEI Coordinator:** Mariusz Orzeł

MAPEI PRODUCTS	MATERIAL INSTALLED	SUBSTRATE	QUANTITY OF PRODUCT	SURFACE	INSIDE/ OUTSIDE	NEW/ RENOVATION	PRODUCT LINE
	DO NOT COMPLETE FOR BUILDING PRODUCTS						
MAPEGROUT 430			20250 kg	50 000 m <sup>2</sup>	OUTSIDE	NEW	PRODUCTS FOR BUILDING
ANTIPLUVIOL W			7760 kg		OUTSIDE	NEW	PRODUCTS FOR BUILDING

