



LEFT.
The Babina
Rijeka viaduct,
located in
Zenica.

Zenica (Bosnia-Herzegovina) Babina Rijeka and Pehare viaducts

POLYGLASS WATERPROOFING MEMBRANES WERE SUCCESSFULLY USED AS CONSTRUCTION MATERIALS FOR IMPORTANT INFRASTRUCTURES

Polyglass SpA has been operating on the Bosnian market for more than 15 years. Polyglass modified polymer-based bituminous waterproofing membranes are synonymous with quality and are now considered reference products for the country's installation companies and professionals working in the waterproofing sector. But it's not only waterproofing membranes that have made their mark; specific products aimed at the bridge and viaduct sectors have also been successfully launched on the Bosnian market. In fact, numerous road decks have been protected over the last few years with Polyglass membranes, particularly POLYBOND HP.

Strategic infrastructures for the country's growth

The 5C Pan-European Corridor is a strategic project for the entire Eastern Europe and, once completed, it will link Budapest to the Croatian port of Ploče on the Adriatic coast, passing through the whole of Bosnia-Herzegovina and the Bosnian capital, Sarajevo, along the way. The new highway (Autoput A1 – E73) is of primary importance for a country characterised by mountain ranges, narrow valleys, numerous rivers and small villages dotted all around the country, and still not very well connected to one another. Modern communications infrastructures, therefore, are an important driver behind

the economic and social growth of this country. The bypass around Zenica, approximately 60 km from Sarajevo, was one of the most challenging stretches from an engineering and construction point of view; along just 8 km of road, two tunnels, four viaducts and a bridge had to be built.

The Babina Rijeka viaduct, which was constructed on the Donja Gračanica-Drivuša section/Klopče-Donja Gračanica sub-section of the motorway, crosses the Babina valley and is the highest deck ever built until now along the 5C Corridor: 120 m above the River Babina.

The viaduct is made up of two parallel buildings: the left one is 389.2 m long and the right one is 380.74 m

long. Each building has three spans supported by one pillar at each end and two central pillars. The height of the two central pillars range between 60 m and 80 m, with a central span of around 165 m. The pillars are anchored in round, reinforced concrete, 18 m-deep wells measuring 12 m in diameter at the base, while their top ends are elastically constrained to the superstructure. The superstructure is made up of a 6.5 m wide reinforced concrete caisson prestressed in a longitudinal direction, with a box-like section that can be varied in height. The width of the upper part of the deck is 13.76 m.

The Pehare viaduct was also built along the same stretch of motorway



LEFT. Waterproofing the road surfaces with Polyglass solutions.

and is also made up of two separate structures: the building on the left is 429.95 m long and the one on the right is 420 m long. The size and position of the pillars was dictated by the geological characteristics of the soil and the local road network. In fact, a part of the geological landscape coincides with a particularly unstable area subject to landslides, while the other part does not suffer from any stability problems. The width of the upper part of the deck is 11.70 m, not including the concrete safety barrier.

A membrane designed for bridges and viaducts

Polyglass SpA took part in the construction of this important infrastructure by supplying the 5 mm plastomeric bituminous membrane POLYBOND HP, a product specifically designed for bridges and viaducts

and compliant with EN 14695 standard (*Reinforced bitumen sheets for waterproofing of concrete bridge decks and other trafficked areas of concrete*).

The concrete deck was initially treated with MAPEFLOOR I 914, two-component epoxy protective coating for concrete, that was broadcast with quartz sand. The product is manufactured and was supplied by Mapei. The next step was to apply the membrane using the traditional torching technique. The special bituminous compound formulation combined with the optimum mechanical parameters offered by the internal reinforcement, consisting of spun-bonded stabilized polyester, make the product suitable to receive paving of hot asphalt with the use of pavers and rollers.

POLYBOND HP and MAPEFLOOR I 914, were approved by the Federal

Ministry of Spatial Planning (document number: UPI/03-19-2-75/20) before the installation.

During the application several pull-out tests were carried out on site with very good results about the adhesion of the product onto the concrete load-bearing structure.

POLYBOND HP P

Prefabricated elastomeric-plastomeric waterproofing membrane with excellent performances.

FIND OUT MORE



TECHNICAL DATA

Babina Rijeka and Pehare viaducts, Zenica (Bosnia Herzegovina)

Period of construction: 2016-2020

Period of the Polyglass intervention: July-September 2020

Intervention by Polyglass: supplying

waterproofing membranes

Client: JP Autoceste FBiH

Main contractors: JV Euro-asfalt and Strabag AG

Supervision: JV Egis International & Ipsa Institut d.o.o.

Polyglass distributor: KIMEEL d.o.o.

Waterproofing contractor:

Bersia d.o.o.

Polyglass coordinators: Andrea Storani and Unka Duman, Polyglass SpA (Italy)

MAPEI PRODUCTS

Treating the concrete deck: Mapefloor I-914

POLYGLASS PRODUCTS

Waterproofing membrane Polybond HP P

For further information on products visit mapei.com and polyglass.com



HIGH PERFORMANCE ROAD MEMBRANES

- SAFETY AND COMFORT
- GREATER CAPACITY AND DURATION
- LESS MAINTENANCE
- GREATER EFFICIENCY
- LOWER ENERGY CONSUMPTION



POLYSTRADA membranes guarantee that the road paving is waterproofed and prevent the phenomenon known as "pumping" which is water rising to the surface. Their structural function is to absorb and apportion the stress due to vehicles passing and extend the durability life of road paving.

