



CASE STUDIES

TRANSPORTATION ENGINEERING

GEOSYNTHETICS

THE RECONSTRUCTION OF D35 MOTORWAY CEMENT CONCRETE ROAD

Product	geoNETEX A PP 500 UVLS	46 200 m ²
Location	Velký Újezd - Lipník nad Bečvou, Czech Republic	
Installation	2022	
Installer	Metrostav Infrastructure a.s.	

The motorway network in the Czech Republic undergoes a permanent progress comprising not only the construction of new sections but the maintenance and reconstruction of those in service as well. The latter case also applies to an unfinished stretch of D35 motorway that is supposed – in its final form – to connect a section between Liberec and Lipník nad Bečvou where D35 connects to D1 motorway. This is going to enhance European E442 road from Karlovy Vary to Žilina. One of the parts planned for reconstruction was the stretch from Velký Újezd to Lipník nad Bečvou (more specifically, between 288,7 – 292,8 km in the right lane) where it was necessary to upgrade the cement concrete road surface.

The original cement concrete cover of the road was in a serious disrepair – mainly because of the disintegration of concrete in transverse cracks (fissures, potholes) that resulted in occurrence of map or/and longitudinal crevices in the road's surface. In this case, the decision was made to remove the existing cement concrete surface and replace it with a new one. Thanks to using up-to-date technologies and techniques, some of the disadvantages linked to the usage of this particular road surface type in the past should be eliminated.

The road reconstruction started with the removal of the existing cement concrete cover (including the bituminous membrane), the cement stabilization layer was eliminated in the second phase and the underlay layer was recycled with the help of a milling machine as the final step. Onto the thus-prepared foundation, a multi-layer comprised of 200 mm-thick subgrade cemented with hydraulic binders, 200 mm-thick cement stabilization layer, non-woven geotextile and two-layer cement concrete cover (220 + 50 mm) made from CB I (C30/37 XF4) concrete was laid. After finishing the above stretch of motorway, maximum service speed of 130 km/h was maintained.

In order to separate the individual layers of the road, enable unequal motions between the cement concrete cover and the foundation layer and secure the drainage function during the design life period of the motorway, a non-woven polypropylene geotextile **geoNETEX A PP** with area weight of 500 g/m² produced by JUTA a.s. company was picked. The construction works were carried out by Metrostav Infrastructure a.s. as the main contractor.

