

Constructing connections.
Consciously.

Case Study

Versatile overpass that works for nature and people, Bulgaria

ViaCon provides a natural-looking, installation-friendly solution for road overpasses that works with time, soil and financial constraints.

THE CHALLENGE

Traffic safety has long been an issue for railway and local agricultural crossings in Bulgaria. As a result, a construction initiative was introduced to improve approximately 30 lots of overpasses, which involved a variety of construction technologies.

Each overpass contains a couple of supporting walls for the road approaches to the overpass. In most cases these are

mechanically stabilised earth (MSE) walls with geometrical dimensions, such as:

Width at crown: 15 m

Width at base: 33 m

Height: from 4.8 to 10.2 m

Live load: LM1

Dynamic load: $agR = 0.15 g$

Foundation soil parameters:

$\varphi_{ef} = 15.28^\circ$

$C_{ef} = 14.46 \text{ kPa}$

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VIACON

Railway overpass, Bulgaria



THE SOLUTION

ViaCon was included as a full solution provider for MSE walls in the first three projects that made up this initiative.

ViaCon Bulgaria proposed a wraparound reinforced soil body clad by steel galvanised mesh with larger stone filling. This achieved overall stability with the use of PET geogrids combined with proper grade structural embankment fill material.

To make the project possible, ViaCon provided a full, end-to-end solution, from design to technical advice to delivery.

THE ADVANTAGE

The system of passive facing with wraparound anchorage offered versatility in favour of cost, stability and ease of construction.

- Proposed facing was least expensive
- All settlement deformations were absorbed into the time of construction
- Wraparound system was easily handled by the builders

The complete solution helped the customer improve their efficiency – working with a highly reliable ViaCon engineering staff and the premium German geogrid supplier.

With this MSE wall project, ViaCon Bulgaria established a strong record of highly reliable structures in railway construction in Bulgaria and continues to partner with customers to offer more economically and environmentally sustainable civil-engineering projects.

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CONTACT US

info@viacongroup.com

VIACON

www.viacongroup.com

Björklundabacken 3, 436 57 Hovås, Sweden