

Constructing connections.
Consciously.

Case Study

Railway line rehabilitation after earthquake in Turkey

ViaCon Türkiye worked on post-earthquake renovation of steel corrugated culverts, bridges and tunnels on 4 railway lines.

THE CHALLENGE

In the eastern region of Turkey, commercially critical railway lines were severely damaged as a result of the major earthquake that hit in 2023. It was essential to get these lines running again in as short a time as possible, due to the economic value these lines represent.

ViaCon Türkiye was able to convey that we offer the strongest alternative for the

rehabilitation of the infrastructure and after challenging negotiations, ViaCon solutions were selected to undertake rehabilitation on these lines.

The ViaCon team worked against challenging geographical conditions in the region, time pressure and several structure types across many different locations.

Learn more at viacongroup.com

VIACON

THE SOLUTION

Location 1

An 1100 m section of an 11 km long railway tunnel constructed using the TBM method in the area on the fault line was severely damaged.

As a result of the engineering analysis, it was concluded that reinforcement with a MultiPlate structure would be the optimal solution for rehabilitating the damaged area.

The reinforcement work was completed in only 65 days with the ViaCon solution. It would have taken two years if done with concrete.

After production in the factory, the assembly team, working in a narrow area in the tunnel, continued assembly with record progress of 16 m per day.

Location 2

A railway line, which passes through a mountainous area, was damaged and unusable due to rocks crumbling and falling after the earthquake. As a result, the entire line had to be renewed and secured with rock protection tunnels.

Due to geographical difficulties and time constraints, it was concluded that the best solution for these structures was corrugated steel tunnels.

A total of 2100 m rockfall protection tunnels are under construction in various sections.

Location 3

In a section under a railway line, additional protection was required to protect a pipeline.

A steel bridge was constructed for the protection of the pipeline, and a hydraulic culvert was constructed for the stream passing by.

Location 4

All of the hydraulically inadequate culverts and bridges on the line, which were damaged

after the earthquake, were designed as steel with the modernisation of the line. Seventy-five MultiPlate steel culverts and 35 HelCor steel pipes for drains were used to complete the design, and implementation was started.

THE ADVANTAGE

The benefits of ViaCon's structures are many:

- Ease of assembly: Assembling in hard geographical conditions where alternatives are difficult to transport
- Minimising tunnel cross-sectional changes, offering the best solution for tunnel reinforcement
- Rapid installation: Assembling all the plates and keeping the structure in stock to make installation fast and possible to do all at once when the site is ready, up to an 80% time advantage for almost all structures
- Cost benefits: Providing up to a 20% advantage in terms of cost compared to reinforced concrete solution in some structure types
- Sustainability: Offering the most environmentally friendly, sustainable solutions compared to alternatives

SPECIFICATIONS

Fabricator: ViaCon Türkiye

Size: Different types of SC-MP-HC

Corrosion protection: Galvanised steel, polyurea coating, painting.

READ MORE AT

www.viaconacademy.com



CONTACT US

info@viacongroup.com

VIACON

www.viacongroup.com
Björklundabacken 3, 436 57 Hovås, Sweden