Case Study

A19 Verstärkung Unterführung der Nebel und Gemeindestraße bei Listow

Rehabilitation of the underpass at the A19 federal motorway using a custom-designed corrugated steel profile.



The Challenge

The main challenge in this project was to build as close as possible to the existing structure in order to maintain the maximum possible clearance profile. At the same time, the solution had to take into account different footing heights, embankment conditions at the inlet and outlet, as well as construction sequence constraints and cut geometry.

The project therefore required a structure precisely adapted to the local conditions, both geometrically and structurally.





The Solution

ViaCon supplied a ViaPlate® 380 solution based on a customised circular arch profile. The corrugated steel structure was individually adapted to the site conditions and structurally designed so that, after backfilling with suitable material by the contractor, it carries the loads independently.

This means the existing concrete bridge no longer needs to perform a load-bearing function. It can fail completely structurally and now serves only as a surrounding shell to the new solution.

The Advantage

- Built close to the existing structure to keep the clearance profile as large as possible
- Customised circular arch profile for demanding existing conditions and geometry constraints
- Independent load-bearing system – no reliance on the capacity of the old concrete bridge
- Underpass strengthened without replacing the existing bridge
- Traffic on the motorway above can continue without any restrictions
- Long-lasting steel, Duplex coating with galvanizing to DIN EN ISO 1461:2009, plus 240 µm epoxy-polyurethane coating on each of the inside and outside

Specification

Profile: ViaPlate® 380 – VP3-SA sprec 37s – circular arch profile

Span: 10.64 m

Height: 4.28 m

Length: 57.62 m

Slope: 1:1.96

Skew angle: Inlet 65.82° / Outlet 59.42°

Plate thickness: 8.0 mm

Corrosion protection: Duplex coating, galvanizing to DIN EN ISO 1461:2009, plus 240 µm epoxy-polyurethane coating on each of the inside and outside.

Traffic load: DIN EN 1991-2, LM 1

Application: Underpass for the river Nebel and a municipal road beneath the A19

Read more at

viacon.co.uk/knowledge-hub

Contact us

info@viacongroup.com

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

V-1-1041-DEVP-CAS-EN-A01