



The HŽ-2 overpass in Križevci is an important element in establishing an uninterrupted link between Zagreb and the Hungarian border.

IMAGE SOURCE: PERI SE

Rapid progress in a 5-day cycle with award-winning PERI solution: The innovative VCT Composite Track ensures swift construction progress

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- The HŽ-2 overpass in Croatia is the first project in the country to use PERI's award-winning VARIOKIT VCT Composite Track.
- The composite track enables fast, efficient construction with a five-day concreting cycle for 10-meter sections.

- Its design eliminates the need for penetrations in the carriageway slab, enhancing quality and durability.
- Hydraulic movement of the track allows easy positioning without heavy machinery, simplifying onsite operations and supporting sustainable bridge construction.

The HŽ-2 overpass in Križevci, Croatia, is part of the DC 10 motorway, which connects Sveta Helena near Zagreb with the Hungarian border at Gola. The overpass spans the new M201 railway line, the Glogovnica River and roads 21 and 24. The overpass is a steel composite bridge with a total length of 502 metres, of which the steel composite section measures 489 metres. The carriageway slab is being constructed using the in-situ concrete method and is the first project in Croatia to utilise the VARIOKIT VCT Composite Track. To ensure that the bridge could be constructed quickly and cost-effectively, a combination of steel and concrete was chosen.

The steel section of the load-bearing bridge section consists of two 2.00-metre-high I-shaped main beams. The main longitudinal and cross girders are made of welded steel sheets of varying thicknesses. The bridge is divided into 13 bridge spans and the carriageway slab was constructed in 52 concreting sections, each approximately 10 metres long. The superstructure is 11.70 m wide to provide sufficient space for traffic. The thickness of the concrete slab varies from 22 cm to 35 cm for ideal weight optimisation.



The VARIOKIT VCT Composite Track, a solution for steel composite bridges that won the bauma Innovation Award 2025, is making its début in Croatia.

IMAGE SOURCE: PERI SE

The VARIOKIT VCT Composite Track makes its début

This overpass project is the first in Croatia to utilise **PERI**'s VARIOKIT VCT Composite Track. The VARIOKIT VCT Composite Track won the Innovation Award at bauma 2025 in the 'construction' category, and its benefits are clearly evident in this project.



The VCT Composite Track runs beneath the superstructure and does not require any formwork carriage supports, which results in a higher quality of carriageway slab and simplifies and expedites construction processes. This is also made possible by a hydraulic drive.

IMAGE SOURCE: PERI SE

This allows the carriageway slab to be manufactured without having to deal with the problematic block dowel effect of the formwork carriage supports that are usually welded in place. Similarly, the VARIOKIT VCT Composite Track does not necessitate any penetrations in the carriageway slab. This eliminates the need for subsequent sealing of the through-holes, significantly increasing the quality and service life of the carriageway slab and contributing to sustainable bridge construction.



The composite track is quick and easy to operate and move. Obstructions are simply passed over.

IMAGE SOURCE: PERI SE

Other local factors also make the composite track the ideal solution. Since only telescopic loaders and a mobile crane are available on the construction site, the hydraulically controlled movement of the composite track is an ideal feature. Once it is mounted on the steel beam, the composite track can be moved forwards or backwards into the relevant concreting sections without the aid of construction machinery.



As the VCT Composite Track is moved beneath the superstructure and does not require any supports or carriageway penetrations, work can be carried out above without any hindrances. This simplifies and speeds up processes.

IMAGE SOURCE: PERI SE

What's more, tasks such as installing steel reinforcement or concreting the carriageway slab can be carried out without any obstacles and with free access from above, which significantly speeds up and simplifies the process. By using the VCT Composite Track, it was possible to achieve a concreting cycle of just five days for standard sections with a length of ten metres. With these short cycle times, it is possible to meet or even beat the tight one-year bridge construction deadline.



The fact that the VCT Composite Track can be moved hydraulically also reduces the requirements for construction machinery on site. A telescopic crane is sufficient for assembly; no mechanical assistance is required for subsequent operation.

IMAGE SOURCE: PERI SE

Conventional challenges are on the decline

The composite track also provides a smart solution to other challenges that arise when constructing in-situ concrete carriageway slabs for steel composite bridges. The hydraulic drive with direction change function enables the composite track to be used to perfection for the classic back-step method. It is possible to simply pass beneath sections that have already been concreted in order to reach the next concreting section. "VCT makes our work so much easier and faster in situations like this. These issues simply don't exist any more. With VCT, you need not worry about height differences or obstacles. You can just continue working uninterrupted," says Talha Kaymak, Site Manager at KAMGRAD d.o.o., the company responsible for constructing the overpass.



Using the VCT makes it possible to achieve a 5-day concreting cycle and makes a big difference in terms of keeping to the planned construction schedule.

IMAGE SOURCE: PERI SE

PERI has assigned a supervisor to assist with the construction work on site, and the construction site team has received comprehensive training on how to use the composite track. PERI's solution is complemented by additional components from the compatible VARIOKIT Engineering Construction Kit. A total of around 60 tonnes of PERI materials are in use on site.

The HŽ-2 overpass is a prime example of innovative solutions in modern bridge construction. It is the embodiment of efficient resource use and outstanding engineering, paving the way for long-lasting and sustainable infrastructure.

Source: PERI SE