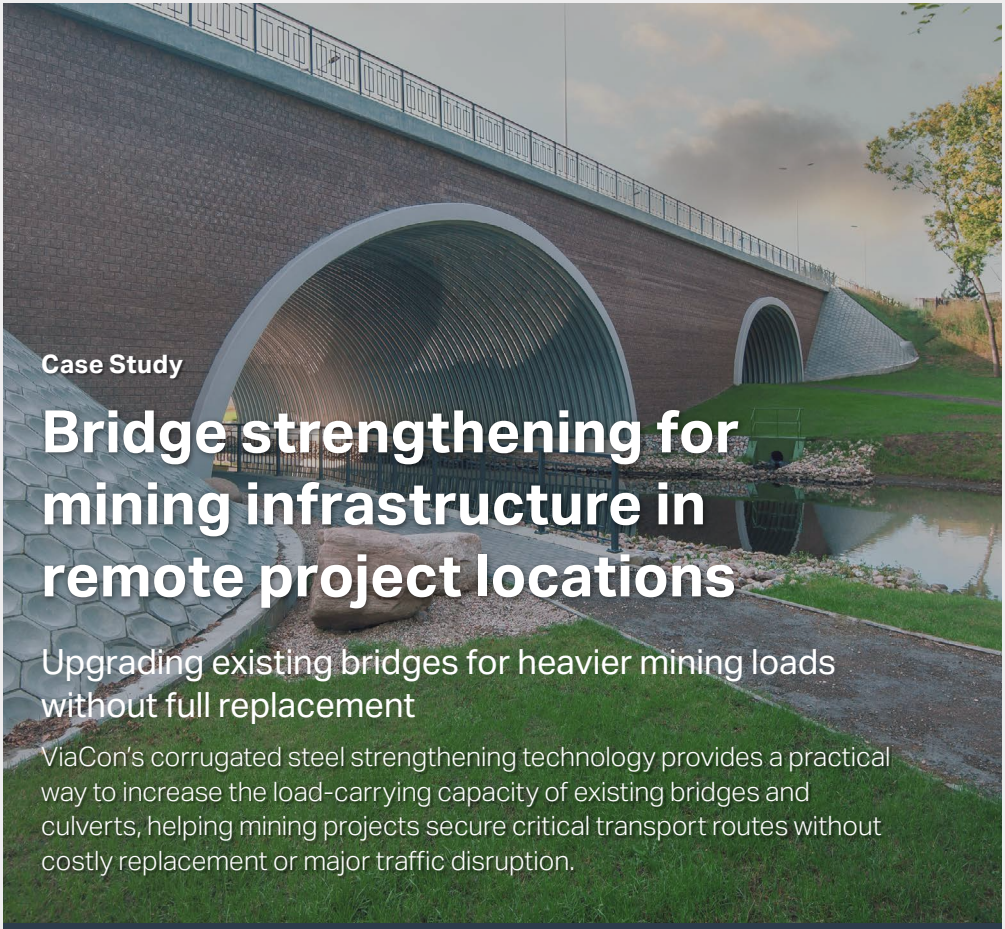

Case Study

Bridge strengthening for mining infrastructure in remote project locations

Upgrading existing bridges for heavier mining loads without full replacement

ViaCon's corrugated steel strengthening technology provides a practical way to increase the load-carrying capacity of existing bridges and culverts, helping mining projects secure critical transport routes without costly replacement or major traffic disruption.

The Challenge

Mining developments often depend on existing road networks and bridges that were originally built for much lighter traffic than modern mining projects require.

As projects move into construction and commissioning, transport routes may suddenly need to accommodate heavy construction vehicles, oversized equipment, processing plant components, high axle load trucks and increased traffic volumes. Existing bridges can then become a critical bottleneck, limiting access and increasing project risk.

In remote mining locations, full bridge replacement is often difficult to justify because of cost, terrain, logistics, long construction schedules and the need to keep transport routes open for ongoing operations.

Clients therefore need a way to increase bridge capacity quickly, safely and with minimal disruption.

The Solution

ViaCon strengthens existing bridges and culverts by installing a corrugated steel structure beneath the original structure. After rehabilitation, the new corrugated steel structure is designed to carry the full design load structure and the new corrugated steel shell is then filled with concrete, creating a composite system with significantly increased load-carrying capacity.

The method can be used for structures ranging from small culverts with spans of around 1.2 metres to bridge structures with spans of up to 30 metres.

A key advantage of the solution is that installation can often be carried out without interrupting traffic above. Where needed, the work can also be completed in stages, allowing critical access routes to remain in operation during construction.

Technical specification

Application
Bridge and culvert strengthening for mining infrastructure

Solution type
Corrugated steel structure installed beneath existing bridge or culvert

Structural system
Composite strengthening using corrugated steel and concrete infill

Span range
Approx. 1.2 m to 30 m

Key benefit
Increased load-carrying capacity without full bridge replacement

Installation approach
Often possible without interrupting traffic, with staged construction where required

The ViaCon advantage

This approach demonstrates the value of corrugated steel strengthening for mining infrastructure where access, schedule and logistics are critical.

Compared with full bridge replacement, ViaCon's solution offers:

- increased load-carrying capacity for heavy mining and construction traffic
- strengthening of existing bridges and culverts without full demolition
- minimal disruption to transport routes during construction
- staged installation where required
- a practical solution for remote locations and difficult terrain
- reduced construction footprint and equipment demand
- faster implementation than conventional replacement methods
- extended service life for existing infrastructure
- and lower material use and waste compared with complete replacement

By strengthening existing bridges rather than replacing them, ViaCon provides mining developers with a practical way to remove transport bottlenecks, reduce project risk and prepare access routes for modern mining loads. The result is a safer, more resilient and more efficient solution for extending infrastructure capacity in remote mining developments.

Read more at

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