Case Study

Proven corrugated steel structures for underground mining infrastructure in Poland

More than 60 corrugated steel structures supporting one of Europe's largest copper mining operations

Since 2020, ViaCon has supplied more than 60 corrugated steel structures to the largest copper mining operator in Poland, supporting underground infrastructure across multiple mining sites with solutions adapted to restricted access, demanding logistics and continuous operation.

The Challenge

Underground mining infrastructure must function safely and reliably in a demanding environment. In this case, the client needed to protect critical ventilation while allowing underground mining vehicles and maintenance equipment to continue operating above the structures.

The project was further complicated by restricted access, limited working space, difficult logistics and the need to minimise disruption to ongoing mining operations. Conventional construction methods were less suitable in this type of underground environment, where transport, installation and site activities must be carefully controlled.

The client therefore needed a solution that combined structural reliability, practical installation and long-term durability.

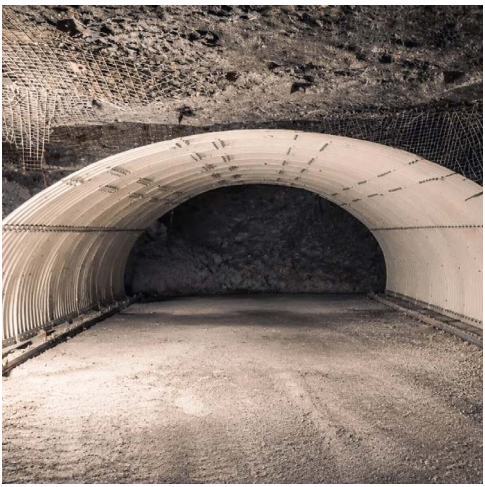
The Solution

ViaCon supplied a series of corrugated steel structures used as protective covers for underground ventilation tunnels and associated infrastructure.

The structures were designed as modular systems, allowing the components to be transported underground through existing shafts and tunnels and assembled directly at the point of installation. This made the solution practical to deploy within the constraints of an active mine.

To simplify the installation process further, the structures were placed on specially designed steel foundations. This eliminated the need for conventional concrete foundations and removed wet works from the underground construction process.

Once installed, the structures provided robust protection for ventilation infrastructure while also carrying operational loads from underground vehicles and equipment. The soil-steel system combines the corrugated steel shell with the surrounding backfill to create an efficient structural solution with high load-carrying capacity and good tolerance to ground movement.



Technical specification

Project
Underground mining infrastructure

Location
Poland

Application
Protective covers for underground ventilation tunnels and associated infrastructure

Structure type
Corrugated steel structures

Number of structures supplied
More than 60

Installation period
Since 2020

Foundation solution
Specially designed steel foundations

Operating environment
Underground copper mining operations

The ViaCon advantage

The project demonstrates the advantages of corrugated steel structures in underground mining applications.

Compared with more conventional construction methods, ViaCon's solution offered:

- protection of critical ventilation infrastructure
- reliable structural performance under underground operational loads
- lightweight modular components suited to transport through shafts and tunnels
- rapid assembly in confined underground spaces
- no need for conventional concrete foundations
- reduced construction complexity and installation risk
- minimal disruption to ongoing mining operations
- long-term durability in demanding underground environments
- low maintenance requirements over the service life

Since 2020, more than 60 structures have been successfully supplied and installed, making corrugated steel structures an established solution within one of Europe's largest copper mining operations. Supported by regular inspections, measurements and engineering follow-up, the installations continue to demonstrate reliable structural performance, operational safety and long-term stability in demanding underground conditions.

Read more at

www.viaconacademy.com

Contact us

info@viacongroup.com

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

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