



Project Profile



Nine heavy haul road conveyor tunnels for remote Chilean site

AIL Mining was pleased to have been a project partner with Minera Escondida in Chile for the design and supply of nine heavy haul road conveyor tunnels. The multi-year deal was divided into two phases with five tunnels in one phase and four in the next.

The client recognized that our deep-corrugated Super•Cor Structural Steel Plate was a proven product that met all of the internationally recognized design standards for these critical installations. They chose Super•Cor over conventional plate for its ease of construction, pre-



Project at a glance:

Project Name: Escondida Ore Access Project and Escondida Organic Growth Project 1

Location: Chile

Products: Super•Cor Custom High Profile Arches

Application: Conveyor Tunnels under Heavy Haul Roads

Dimensions: Span 9.25 m, Rise 5.2 m

2009: Five tunnels, lengths between 58 m and 105 m

2012: Four tunnels, lengths between 85 m and 140 m

Installation Times: About two months for each structure



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assembly options and heavy load carrying capacity — without having to use concrete ribs or reinforcements.

We worked closely with the project partners to ensure all requirements were met:

- Load design for large haul trucks and shovels at very low cover
- Cover ranges from 1.5 m to 13 m
- Some tunnels had to be installed under existing pipelines
- Others had to be installed over working conveyor lines

And, here's how it rolled out

- **Load design for large haul trucks and shovels at very low cover**
We used our knowledge of heavy machinery and our expertise in soil-steel interaction with our FEA design programs to provide an efficient structure without the need for any concrete reinforcement. In some cases, we were able to complete the designs without the requirement for additional steel ribs — making assembly even easier.
- **Cover ranges from 1.5 m to 13 m**
We offered an efficient solution for all design cover ranges and we met the most stringent design criteria of the current AASHTO LRFD design methods. In addition, we incorporated seismic design criteria for this site located in one of the world's most active earthquake areas, 3,200 metres above sea level in the Chilean Andes.
- **Some tunnels had to be installed under existing pipelines**
Our on-site representative worked with the project team to help propose a viable solution for protecting and supporting the active pipelines during construction and for building the tunnels under a very limited height clearance.
- **Others had to be installed over working conveyor lines**
In consultation with the project team, we provided examples and solutions on how to best plan the pre-assembly and installation of the tunnels that needed to be installed over live conveyor systems. We were also on-site to help troubleshoot and refine the process.



We worked closely with the consultants on a continuing basis to manage the schedule and adapt to changes in the design requirements as both phases of the project progressed.

Doubly convinced of its ease of installation in remote locations and overall installed cost savings over other alternatives, the client has continued to choose Super•Cor solutions for subsequent projects.

AIL Mining

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