



SIKA AT WORK

CSA COBAR

HIGH GRADE COPPER IN NEW SOUTH WALES, AUSTRALIA

BUILDING TRUST



CSA COBAR

PROJECT DESCRIPTION

Mining in the Cobar ore field dates back to around 1871 when first mineralizations were discovered in the area and none continuous mining took place in the region ever since. The name CSA still links to the first financial syndicate "Cornishman- Scotsman-Australian" that enabled first, large scale mining. Today the CSA Cobar mining complex is a large, industrial, underground mining operation with an annual throughput of roughly 1.1 MT of ore through the Cobar mill.

Cobar ranks among the highest grade copper mines globally with copper grades up to 5% and is owned by Glencore. The CSA Cobar mine is located in the western Cobar basin around 12 km North of the town Cobar in New South Wales and is also one of the deepest mines operated in Australia with a resource that reaches down to almost 2.000m below surface. Copper-lead-zinc-silver mineralization is hosted in bedded siltstones and shists (the Cobar slate) and steeply dipping. The widths of mineralization of up to 16m allow long hole-as well as cut-and fill stoping, using cemented paste backfill. Mineralization comprises several individual lenses in several systems including QTS North, QTS South and the Western system.

RAPID MINE DEVELOPMENT

Due to the deep setting of the current production headings, an efficient production, transport and application of shotcrete is required. The annual shotcrete consumption of the CSA

Cobar complex is around 10-15'000 m³. Elevated stress levels induced by mining and the increasing depths pose special requirements to the primary shotcrete support installation. High energy absorption of the shotcrete liner is required to deal with deforming ground and seismic shocks induced by mining and the lithological stresses. SikaFiber® technology is used to control these stresses and deformations. The Sika Sigunit® provides the required rapid early strength development of the shotcrete and enable short mine cycle times for efficient mining and drifting rates at a moderate accelerator dosage. In combination with Sika water reducing admixtures the integrated shotcrete solution has proven very successful at the CSA Cobar operation that allowed an optimization of the mix design also with view towards optimizing the cost performance of the whole in cycle shotcrete set-up. Together with the the Cobar ready mix producer and the specialised shotcrete contractor Downer Edi, Sika strives for ongoing optimizations and efficiency gains at the Cobar mine site

PROJECT REQUIREMENTS

- Rapid early strength development
- High final strength
- A minimum dosage of accelerator to achieve the required strengths
- Concrete open time > 2h
- High Energy absorption according to ASTM 1550-05



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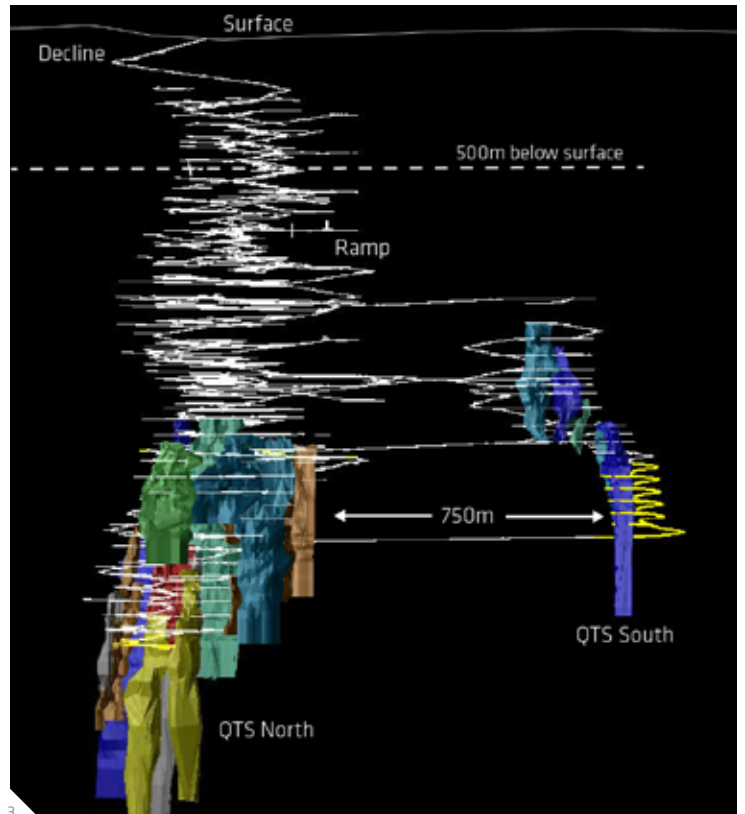
SIKA SOLUTION

Sika's world leading Sikament[®] and Plastiment[®] technology is among the key elements for the shotcrete and concrete works at Cobar. For the shotcrete, the mine relies on the proven Sika Sigunit[®] L530 AF, alkalifree accelerator that has stable properties and is a high performing product when it comes to rapid early strength development. Sika Australia mining team is not only supplying mine consumables but are also present on site to give ongoing support with everything related to underground construction.

SELECTION OF SIKA PRODUCTS

- Sikament[®] NN Superplasticizer
- Sika Plastiment[®] 10 Slump retainer
- SikaTard[®]-990 Consistency stabilizer
- Sigunit[®] L530 AF Alkali-free, high performance shotcrete accelerator
- SikaFiber Force PP65 Macrosynthetic Fiber
- SikaTabilizer[®] 4R AU Concrete stabilizer
- Sika Formol Eco Demolding agent
- Sika Agiclean Concrete remover

- 1 Front: CSA Cobar main shaft
- 2 CSA Cobar RMC plant
- 3 Oblique view of the CSA Cobar mineralization and underground infrastructure
- 4 On site, underground testing of the Sika shotcrete system
- 5 Ore silos and CSA concentrator plant
- 6 Shotcreting underground



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PROJECT PARTICIPANTS

Owner: Glencore Internation plc
Project participants: Cobar concrete, Downer Edi
Sika Organization: Sika Australia

Our most current General Sales Conditions shall apply. Please consult the most current local Product Data Sheet prior to any use.



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