

Project:

Gosowong gold mine project

Location:

Halmahera island, province of North Maluku, Republic of Indonesia

Project period:

2014-2020 (estimated)

Applicator/Contractor:

PT Nusa Halmahera Minerals

Market sector:

UGC sprayed concrete admixtures

Products used & amounts:

MasterGlenium SKY 8770

MasterRoc HCA 10

MasterRoc MS 610

MasterRoc TCC 735

MasterRoc SA 167

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Gosowong gold project

Improvement on sprayed concrete for ground support



Sprayed concrete (shotcrete) trial at Kencana and Toguraci underground mine, Gosowong gold project

The background

Gosowong is owned and operated by PT Nusa Halmahera Minerals (PTNHM), an Indonesian company 75 per cent owned by Newcrest*. It is located on Halmahera Island, in the North Maluku Province of the Republic of Indonesia, approximately 2,450 kilometres north east of the national capital, Jakarta. The Gosowong mining permit, called a Contract of Work (CoW), continues until at least 2029. Gosowong produces gold and silver ore. The processing plant at Gosowong, which has a capacity of up to 800,000 tonnes per year, comprises a primary jaw crusher followed by a SAG and ball mill circuit and a recently completed Vertimill circuit. and is smelted to produce gold ore. Gold and silver ore produced at Gosowong is refined in Jakarta.

The challenge

Gosowong gold project has 2 main underground mine: Kencana and Toguraci. Kencana underground has soft and fractured rock with potential wet muck and ground collapse, while Toguraci underground has hard solid rock with high substrate temperature (substrate surface temperature 60-70° C).

Normal sprayed concrete mix design could not achieve 32 Mpa (28 day) and 1 Mpa in 1 hour as required by the engineers.

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Our solution

Sprayed concrete solution from Master Builders Solutions consist of various admixtures combined with training package for operator, supervisor and engineer level. These level of trainings purposed to empower PT NHM people in applying good quality sprayed concrete for improving effective and efficient ground support and safe working environment at mine site. Our special admixtures:

- Internal curing agent, **MasterRoc TCC 735** helps to achieve significant cured concrete in high temperature environment
- Hyperplasticizer, **MasterGlenium SKY 8770** significantly improve workability even at poor sand
- Hydration Control Admixture, **MasterRoc HCA 10** helps to main tain workability even overnight
- Densified silicafume, **MasterRoc MS 610** help to improve cohesiveness of sprayed concrete mix
- Alkali free accelerator, **MasterRoc SA 167** significantly boost early strength development to support mine productivity

The customer's benefit

By using Master Builders Solutions, Gosowong gold project operation able to maintain effectiveness and efficient ground support. Hence, safety working environment in underground had been much improved and indirectly improve productivity of mine.

Projects facts at a glance

In December 2012, Newcrest completed the sale of a 7.5% interest in PTNHM to PT Aneka Tambang (Antam), an ASX and Jakarta Stock Exchange listed company, for market value, reducing Newcrest's interest in PTNHM to 75% (down from 82.5%) and increasing Antam's interest to 25% (up from 17.5%).

Master Builders Solutions from BASF

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