

Cadia East mine Roadway panel grouting

Project:

Roadway panel grouting

Location:

Cadia East mine

Project completed:

Ongoing

Applicator/Contractor:

Newcrest

Concrete Producer

Boral Concrete

Market sector:

Underground Construction

Products used & amounts:

MasterRoc[®] MG 100 in 680kg bags. Over 300 tonnes.



Bulk bag loading into auger hopper for transfer into concrete agitator.

The background

Newcrest Mining Limited's Cadia Valley Operation is located 25 kilometres south-west of Orange, in central western New South Wales.

Recently, the Cadia East mine placed 130MPa precast concrete panels as roadway in the underground mine. The panels were set into place over 50MPa sub-base concrete and were required to be grouted in.

Initially, the grout was being supplied by Boral Cadia batch plant and it consisted of cement, water and Delvocrete Stabiliser (MasterRoc HCA 20). There was concern, after movement from some of the initial panels, that there was too much shrinkage with the grout.

The challenge

After discussions with Newcrest and Boral, it was determined that a new, non-shrink grout was required for the job.

Due to the size of the grouting operation, it was preferred that it still be batched into 4m³ concrete agitator. BASF and Boral had two weeks to develop a suitable grout mix.

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Cadia East mine

Roadway panel grouting



Auger feeding Meyco FC100 into agitator.



Flowable grout mix.

Our solution

BASF proposed using the MasterRoc MG100 grout additive. Widely used in cable bolt grout mixes for tunnel projects, it would provide the flow, stability and non-shrink qualities required.

MasterRoc MG100 usually comes in 15kg bags, meaning the 4m³ load would require 680kgs of product in 45 individual bags. To reduce the handling of so much product, Boral requested we produce the product in bulk bags.

A rapid and timely response enabled the production team to procure the raw materials and produce the initial 6.8T of MasterRoc MG100 in 680kg bulk bags within the two week period.

The initial bulk bag was trialed during night shift with BASF expert on site to supervise. After some determination of mixing time the grout looked homogeneous and flowable with no sign of segregation. It was reported from underground that the grout pumped and flowed extremely well and continues to do so.

The customer's benefit

- For Boral, we were able to continue to supply a grout mix to the mine for this ongoing project. It also greatly reduced manual handling of the grout additive.
- For Newcrest, it provided a non-shrink grout solution in a bulk quantity and greatly reduced the manual handling typical of a pre-bagged grout product.

Projects facts at a glance

- The Roadway panel grouting started in 2014 and will continue until mid 2016.
- 3L/m³ of Delvocrete Stabiliser is also added into the grout mix to keep the grout fresh for up to 3 hours.

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