



constructive solutions

Newcrest Mining Bund Remedial Works

Telfer, WA

CUSTOMER Newcrest Mining
 SECTOR Mining
 DATE 2022

PRODUCTS

- Fosroc Renderoc LA55
- Fosroc Nitomortar 903
- Fosroc Nitomortar F4 Fillers
- Fosroc Nitocote EP410
- Fosroc Nitoprime Zincrich
- Vector Galvashield XP4 Anodes



At one of the largest gold mines in Australia, acid used in the elution process had led to significant concrete erosion and steel corrosion.

THE PROJECT

In the Pilbara region, the isolated town of Telfer is home to a gold, copper and silver mine run by Newcrest Mining.

Solid sodium hydroxide is used in the gold elution process. Chemical attack meant 70% of the bund floor area needed to be removed and reinstated. The acid sump also needed to be broken back to good concrete and reinstated. Several plinths and steel reinforcements were damaged beyond repair.

THE SOLUTION

This project involved significant surface preparation, including the removal of damaged concrete and any remaining membranes and polyurethanes. Drummy testing around the sump pit ensured all delaminated concrete was removed. The entire area was cleaned with compressed air before new key ways were cut to enable the repair mortar to bond to the existing floor. A final high pressure wash meant the floor was ready for screeding.

Fosroc products were applied in the following steps:

- Step 1:** Floor screed installed using Nitomortar 903 with Nitomortar F4 Fillers. This created a high strength epoxy mortar that hardened quickly.
- Step 2:** An extra coating of Nitomortar 903 was applied to seal the screed.
- Step 3:** Two coats of Nitocote EP410 were applied to the bund floor, bund sump and up stands.
- Step 4:** All new steel was coated with Nitoprime Zincrich. Existing steel was abrasive blast cleaned to Class 2.5.
- Step 5:** Vector Galvashield XP4 Anodes were connected to the steel-reinforced plinths.
- Step 6:** The plinths were formed, pre-soaked and then poured with Renderoc LA55.
- Step 7:** The bund sump walls were broken back to host concrete in good condition, then formed and poured with Renderoc LA55.

THE BENEFITS

Fosroc's specification delivered a comprehensive repair with multiple layers of long-term protection built in, for both steel and concrete. Renderoc LA55 and Nitocote EP410 were key products.

Renderoc LA55

To reinstate the plinths and sump walls, our high strength micro-concrete offered the following benefits:

- deep section repair up to 200mm
- exceptional flow into restricted locations
- maximum compatibility with concrete compressive strength, 30-60 MPa
- unique dual expansion system offers an extremely high level of control of plastic and long-term drying shrinkage
- complies with EN1504-3 Class R4
- low alkali content minimises risk of alkali-silica reaction
- excellent bond to concrete substrates without independent primer
- very low permeability protects against carbon dioxide and chlorides
- self-compacting nature eliminates honeycombing and displaces air without vibration.

Nitocote EP410

This high build two pack epoxy coating is ideal for mines and other environments with aggressive chemical exposure and immersion conditions. Benefits for this project included:

- excellent chemical resistance
- excellent adhesion and film build to SSD concrete and steel
- excellent abrasion resistance
- easy application.



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