



constructive solutions

Middle Head Fortifications Sydney Harbour National Park, NSW



CUSTOMER NSW National Parks and Wildlife Service
 SPECIFIER ACOR Consultants
 CONTRACTOR Dapcor
 SECTOR Heritage buildings
 DATE 2021

PRODUCTS

- Fosroc Renderoc LA55 Plus
- Fosroc Renderoc HB40 Plus
- Fosroc Nitobond EP
- Fosroc Nitoprime Zincrich
- Fosroc Concure X90



Repairs in progress



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To repair heritage-listed military assets overlooking Sydney Harbour, Renderoc LA55 Plus and Renderoc HB40 Plus were selected for their high resistivity formula. This strategic repair has enabled safe visitation and future protection while retaining heritage values.

THE PROJECT

The stretch of coastline between Georges Head and Middle Head is a key site in Australia's military history, with concrete gun emplacements and lookout towers mostly constructed during World War II.

As part of a \$10 million project to integrate the two headlands into the Sydney Harbour Scenic Walk, the heritage assets required extensive concrete repairs. Carbonation had caused significant spalling and the deteriorating concrete needed to be removed and faithfully reinstated. Increasing concrete cover, adding protective coatings or installing galvanic anodes were not considered appropriate, as they would alter the structures' surface finish and geometry.

THE SOLUTION

Fosroc ANZ provided the ACOR team with specification advice and also visited on site during the repairs by Dapcor Building Services.

For deep repairs in excess of 50 mm, Renderoc LA55 Plus was applied. Renderoc HB40 Plus was used for smaller patch repairs. Both mortars will provide excellent protection against carbon dioxide and chloride attacks.

Before the Renderoc products, Nitoprime Zincrich was used to protect any exposed steel from corrosion. Nitobond EP was applied to help the exposed concrete bond with the new mortar.

As a final step, Concure X90 was applied to the fresh concrete. A water based hydrocarbon curing compound, it protects the mortar from evaporation. It was particularly vital as water curing was not possible at this site, where repair materials were walked in by the Dapcor team.

THE BENEFITS

Renderoc LA55 Plus

- High strength, fluid micro-concrete for structural repairs up to 500 mm.
- Enhanced durability meets the TfNSW B80 concrete specifications (Transport for New South Wales).
- Low alkali content minimises risk of alkali-silica reaction.
- Excellent protection against carbon dioxide and chlorides.
- Exceptional flow into restricted locations.
- Achieves 75 MPa after 56 days.
- Unique dual expansion system controls shrinkage.

Renderoc HB40 Plus

- Ideal for overhead and vertical patch repairs.
- Extra high build, high resistivity and shrinkage compensated.
- Low permeability to water, CO2 and chloride ions.
- Complies to EN 1504-3 Class R3.

AU 1800 812 864
 fosroc.com.au

NZ 0800 657 156
 fosroc.co.nz

Parchem Construction Supplies Pty Ltd
 1956 Dandenong Rd, Clayton VIC AUS 3168

Concrete Plus Ltd
 150 Hutt Park Road, Gracefield NZ 5010

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