



GEOFABRICS CASE STUDY



GABION-FACED WALL DELIVERS LONG-TERM STABILITY FOR SOUTH AUSTRALIAN BRIDGE

PRODUCT USED

Wire Mesh Gabion System

- A modular wire mesh system, designed to create a vertical gabion rock-face finish retaining wall
- Manufactured for an expected working life of up to 120 years, ensuring long-term durability and performance
- High-grade polymer-coated wire mesh provides exceptional corrosion resistance and structural strength, ensuring reliable performance in highly corrosive environments

Similar Product

Geofabrics® Geomesh™ Gabion Wire Mesh System

PROJECT DESCRIPTION

In 1988, the Highways Department of South Australia commissioned a bridge design that combined a gabion facing system with a large horseshoe culvert. The structure was needed to support a roadway spanning a flood-prone stream with unstable banks and heavy clay soil susceptible to slips. Located on Grove Way, approximately 17 kilometres north of Adelaide, the project required a cost-effective, technically sound, and environmentally acceptable design to ensure long-term durability and stability.

OUR SOLUTION

An 8-metre-high multi-plate steel horseshoe arch was constructed on concrete footings, paired with vertical Mechanically Stabilised Earth (MSE) wingwalls upstream and downstream. The MSE wall featured gabion facings with integral polymer-coated woven mesh soil reinforcement extending six metres into the compacted select fill behind the structure. The gabion facing was rock filled with lids left open temporarily to act as a safety fence, while a non-woven geotextile filter cloth provided separation and filtration between the facing and backfill, mitigating hydrostatic pressure.

The wire mesh gabion system accommodated potential subsidence and soil movement without failure, making them ideal for the unstable creek embankments. Construction involved in-situ assembly of multi-plate steel sections embedded in concrete footings at the creek bed. Over the years, inspections in 2008 and 2019 confirmed the polymer-coated mesh remained in excellent condition with no signs of corrosion or stress, validating the long-term effectiveness of the solution.

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