

# Sea Wall Void Filled and Sealed

## INDUSTRY

Infrastructure

## STRUCTURE

Seawall

## PROBLEM

Void filling & sealing

## LOCATION

Sydney, Australia

## DURATION / YEAR

3 days / 2004

## TECHNOLOGY

Benefil

## BUSINESS UNIT

Mainmark Australia



## Summary

Erosion behind the sandstone sea wall at Pulpit Point on Sydney Harbour caused by tidal action was remediated using Benefil light-weight engineering filler grout.

That was judged to be the most environmentally sustainable and the most cost-effective solution to the problem.

## Objectives

The problem for the Hunter's Hill Council engineers was how to best grout behind the sandstone sea wall at Pulpit Point to compensate for the erosion by tidal action and to minimise the risk polluting the harbour.

The main objectives were:

- to fill the large inter-connected voids behind the sea wall.
- to seal the joints between the eroded sandstone blocks.
- to minimise the ingress of sea water washing out soil behind the sea wall, while allowing land water to drain slowly into the harbour.

## Solution

The Chief Council Engineer, having assessed many

and various alternative proposals, selected Benefil, one of our unique proprietary engineered resins as the most sustainable, environmentally inert and cost-effective solution to repair the sea wall.

The section to be grouted was 40m long by 4m wide. The depth varied, with the volume of voids estimated to be about 40m<sup>3</sup>.

Extremely light in weight, Benefil was easily pumped the 60m from the Operations rig where it was mixed. The Benefil was injected from above via 19 tubes spaced at 2m intervals to go down into the large interconnected voids behind the sea wall.

A light-weight, closed cell foam, Benefil readily floats. So foam emerging through the joints in the block-work was contained behind floating booms for easy clean-up. As it is environmentally inert, it poses no risk of contaminating waterways. Its emergence through the joints was proof that the voids were indeed sealed.

The Benefil method was effective in providing a barrier to future erosion of the soil from behind the sea wall and to the potential destruction of the wall itself.

It successfully filled all the voids and sealed the joints between the eroded sandstone blocks minimising the future ingress of sea water. The porous Benefil resin provided a route for the slow escape of rainwater from the land but offered sufficient resistance to the scouring tidal action.