

Case Study



The information in this case study is reprinted from the American Cyanamid AM-9 technical manual. AM-9 was American Cyanamid's acrylamide grout product. Avanti's AV-100 Chemical Grout matches the chemical formulation, usage and performance of AM-9.

Title: Sealing Leaks in a Dry Dock

Location: Fitzroy Dry Dock, Cockatoo Island, Australia

Owner: Australian Commonwealth Government

Grouting Contractor: Cement Linings Pty. Limited

PROBLEM:

Fitzroy Dry Dock, the oldest in Australia, was constructed in the days of sailing ships. Its sides are dressed stone, resting on native rock. Time and water pressure had eroded some of the jointing material, and sea water was entering the dock in a number of places. In addition to the leaks themselves, it was feared that the water might erode fill behind the stone walls.

SOLUTION:

Attempts at caulking and cementing the leaks did not prove successful. Because of the velocity of infiltrating water, it was decided that AM-9 offered the best chance of sealing the leaks.

APPLICATION:

Angled holes were first drilled to intercept the flow behind each leak, then dyed water pumped at a controlled rate through the hole, and its appearance at the leak timed. In this fashion the gel time, pumping rate, and volume of grout required were determined for each hole. AM-9 was then injected using a proportioning pump that enabled fast and accurate changes of setting time, when required. As anticipated, when visible leaks were sealed, pressure shift created additional ones in other places. These, in turn were drilled, dye-tested, and sealed.

RESULTS:

Grouting was a complete success and Australia's oldest dry dock is "dry" again. Because of the speed and convenience of AM-9, the whole job was completed in one week while one ship was out and another not yet in.