

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: Grouting Jointed Rock in Dam Foundation

Location: Tsurata Dam, Kagoshima Prefecture, Japan

Owner: Kyushu, Districts Construction Bureau of the Ministry of Construction

Contractor: Nishimatsu Construction Co., Ltd.

Subcontractor: Fuji Boring Co., Ltd.

PROBLEM:

The foundation rock for a concrete gravity dam 117.5 meters high and 400 meters long was a fine competent sandstone. Severe weathering along calcite veins, joints, and cracks, as well as the presence of three fault zones, have formed seepage channels which could endanger the performance of the dam.

SOLUTION:

It was decided to use AM-9 Chemical Grout after plugging all larger voids with cement.

APPLICATION:

Field permeability tests in the grout holes were used to determine chemical grout volume and gel time. Gel times varied from 20 to 50 minutes. Chemical grout takes were about 1 kg per meter of hole (about one hundredth the average cement grout takes in the same holes).

RESULTS:

After cement grouting and chemical grouting, field permeability tests showed that the use of chemicals decreased the residual permeability by a factor of 20 to as much as 100. This improvement is considered satisfactory and sufficient.