

A methodology to Simulate Flow through Fractured Rockmass

ABSTRACT

A simple and easy to adopt methodology to simulate flow of water through a fracture of certain aperture in the rockmass has been developed in this invention. It has been demonstrated that samples of Paraffin wax (used as an analogue material), with a single fracture created with the help of sand grains, can be used quite satisfactorily to simulate the response of the flow conditions (base pressure and confining stress) on the fractured rockmass, in the laboratory environment. It has been demonstrated that the discharge through the fracture is a function of initial fracture aperture, base pressure and confining pressure. Further, it has been demonstrated that Reynolds number is quite sensitive to the fracture aperture and the base pressure, and there is a critical base pressure, beyond which transition in laminar to turbulent flow occurs.

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