ABSTRACT

There is an increased emphasis on the repair and refurbishment of structures instead of demolition and rebuilding. In a basement wall, the retained soil causes bending moment cracks in the wall. New materials and repairing method have been developed especially where there is water leakage. Polyurethane grout injection method has been used for sealing leaks. However little work has been published on how the resin will flow behind a retaining wall and the spacing between holes and inject pressures.

An experimental program is carried out to study the polyurethane grout penetration characteristics on the soil next to the wall. For a given soil the parameters that influence grout penetration are the shape of injection port, point of location, pressure and moisture content. Experiments are carried out with different type of injection port to increase the surface area of penetration of the resin. An improved injection procedure is proposed. Characteristics of hardened soil samples are studied. Different rate of dispersion could be achieved with proposed pipe attachments. Surface area of penetration is increased with increased moisture content up to a limit.