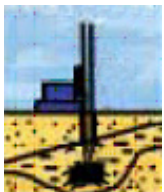


# PERMEATION GROUTING



**GFWA**

SUSTAINABLE TECHNOLOGY



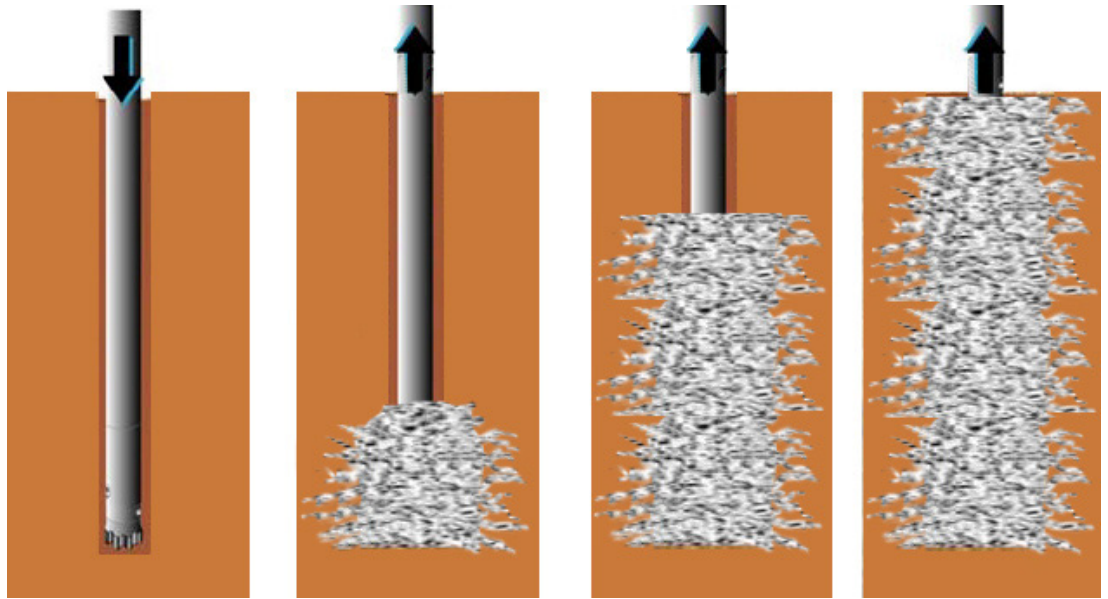
Permeation Grouting is a geotechnical technique for waterproofing and strengthening the ground by filling the voids within a soil or rock mass with a specially designed grout mixture without displacing the soil particles or widening the fissures of the rock. This technique is strictly a low pressure operation. High pressures can cause claquage or the opening of fissures in the soil in a plane perpendicular to the minimum principal stress. In rocks, high grout pressures will cause destabilization and segregation which will reduce the effectiveness of the grouting process.

Grouts are required to have high levels of fluidity and stability. High penetration grouts must also contain extremely fine particles.

According to the void size, grout materials include cement based grouts with filler of foaming additives, cement, bentonite/cement, bentonite cement with high penetration additives, micro fine cement, silica gels and resins.

## PERMEATION GROUTING

## Permeation Grouting



## Permeation Grouting of Parramatta Rail Link



12,000 m<sup>3</sup> of micro fine and ultra fine cement grouts were pumped into the ground at the location of the cofferdam boundaries and the service facility basement at the Lane Cove River Tunnel of Parramatta Rail Link project that links Chatswood to Epping.

The tunnel was approximately one meter below the river's bed.



## Recent References

**Trinity Church, Perth (WA, Australia)**

**Parramatta Rail Link, Cove Lane River Tunnel (NSW, Australia)** – Rail Corp- tunnel & underground structure

**Hinze Dam (QLD, Australia)** – Gold Coast City Council- barrier wall

**Lake Manchester Dam (QLD, Australia)** – Brisbane City Council- barrier wall

**Burnett River Dam (QLD, Australia)** – Burnett Water - barrier wall

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