



## **BMC Microfine Chemical Grout Soil Stabilization - Design Notes and Specifications**

The information supplied is to assist the supplier and installer of BMC products. Product Specifications including:

- Engineering;
- Proposed chemical grout treatment location and ground conditions; • Recommended installation techniques;
- After job care and maintenance.

BMC Chemical Grout Injection offers a cost-effective solution compared to other soil stabilization underpinning methods such as Contiguous Piling or Shore Piling. A unique advantage being there is no disruption or movement to adjacent properties whilst works are being carried out.

BMC Chemical Grout materials must be manufactured and installed as per BMC engineering recommendations to ensure superior results. If guidelines are not followed closely (particularly with after treatment care) the treated area may be prone to movement, collapse or failure.

Generally, any grout treatment proposal over 900mm deep should have an engineer grout block design to be submitted with a building licence showing future retaining. It is recommended to contact BMC for further information and technical advice prior to job commencement.

### **GENERAL DESCRIPTION**

BMC specialize in soil stabilization and underpinning process using a mixture of chemicals and micro fine cements.

The manufacture and application of the BMC grout treatment must be done by a specialist authorized BMC contractor.

The microfine grout mixture is batched on site and pumped under high pressure into the ground forming a continuous compendious mass. The compressive strength achieved by various grout block treatments can provide long term support to existing buildings, retaining walls etc

The grout treatment work to excavations is classed as temporary only. The treated area is designed to provide a load bearing mass suitable for soil retention whilst excavation and permanent engineer designed retaining methods are installed. **It is important to backfill any voids between the grout works and the new retaining as soon as possible to maximise successful results.**

BMC uses ultrafine and microfine Portland cement products for injection. Chemical admixtures included in the batching process ensure a superior product and best results.

It is recommended the grout treatment area always be 300mm lower than the proposed maximum excavation depth. A maximum 3000mm grout block treatment and excavation can be achieved with suitable conditions. With any treatment greater than 900mm it is recommended to REFER TO ENGINEER DESIGN RECOMMENDATIONS.

#### **LOCATION AND APPLICATION CONDITIONS**

There are a number of factors that can add to the effectiveness of the proposed BMC grout treatment.

Not all soil types are suitable for BMC injection. Typical Perth A Class soil types are preferred for grout injection.

When considering soil suitability REFER TO ENGINEER SOIL REPORTS and specialist BMC recommendations upon site inspection.

Ground contamination such as rocks, gravel, tree roots, building refuse etc can affect the suitability of the treatment. These factors can only be determined upon site inspection and soil testing.

The client is responsible for obtaining a signed letter of authorization for any grout treatment where the grout block encroaches onto the neighbouring property including underground.

#### **EXCAVATION AND AFTER TREATMENT CARE**

Correct procedures must be followed to ensure maximum effect and success is achieved on the project.

A minimum of 7 days must be given prior to any excavation works being carried out next to the treated area.

It is recommended that if the ground adjacent to the treated area is to be machine excavated it is done under supervision at all times. Excavation with a digger is recommended as bobcat loaders can push pressure on the treatment block causing movement or failure. **Client must ensure that no machinery touches the grout block whilst excavating.**

It is common for the grout treatment to not have a full 100% spread to treated area. After excavation manual inspection of the treatment can be carried out with a shovel or rod that will indicate any areas where complete success has not been achieved.

Whilst less than perfect spread results do not usually present any problems to the project it is important for the client, contractor to be aware that it is their responsibility to ensure any remedial work such as bracing, packing or re treatment is carried out in a safe effective manner. **Secondary shoring and bracing proposals must be in place prior to excavation.**

If the client/contractor are unsure they must contact BMC for further advice.

Upon initial excavation the outside face of the treatment will appear moist and soft to touch. This part of the treatment is sacrificial only and can be chiseled/benched back manually if required. Approx. 24 hours after excavation the face of the treatment will harden significantly making manual benching more difficult often having to use jack hammers etc.

**BMC must be contacted prior to any pneumatic or mechanical benching works are carried out on the treated area.**

Client must ensure the void created between the temporary grout block and proposed fixture be filled to a suitable compaction level. REFER TO ENGINEER DESIGN RECOMMENDATIONS or BMC specialist advice.

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