# **GEO GROUT**



 PROFESSIONALISM INTEGRITY ·HONESTY

#### **COMPACTION GROUTING**

If you're here looking for compaction grouting services, then you've come to the right place. Geo Grout Ground Modification Specialists Inc. has been providing compaction grouting services for over 33 years and counting.

# COMPACTION GROUTING

**GROUND MODIFICATION** 







#### WHAT IS COMPACTION GROUTING?

Compaction grouting is a process of stabilizing the soil prior to construction. This is accomplished by drilling to a pre-determined depth below the surface and injecting a low-slump, low-mobility soil/cement grout into the ground. The grout mixture creates a pocket deep below the surface that grows as more grout is forced into the ground. As the pocket of grout expands, it compacts the soil around it, causing it to become more stable for the building. In almost all cases, several "stacked" pockets of grout are created, stabilizing the soil over a depth that will support the intended structure.

## **COMPACTION GROUTING INSTALLATION**

Compactiont pattern. At each location, the casing is driven or drilled to design depth and grouting is performed from the bottom up in short lifts of typically 1-2 ft until a predetermined refusal criterion (maximum pressure, maximum grout volume, or maximum structural surface settlement) is met.

## **Compaction Grouting Utilization**

Compaction grouting builds up the ground; it is utilized to stabilize underground formations for pipes and tunnels. It can also hold foundation settlement, improve bearing capacity of soils, and manage sites with sinkhole activity.

The following can use compaction grouting subsurface conditions.

- Sinking or settling formations
- Sinkholes
- Weak soils
- Inadequately compact fills

## Advantages of Compaction Grouting:

Compaction Grouting can manage the settlement of foundations on existing homes; stabilize subsoils that are defined to be weak before starting construction on a new home or structure, and lifting existing foundations that have settled.

# Here are some advantages of Compaction Grouting:

- Rapid installation
- No spoil generation
- Can be accomplished in restricted access situations
- Structural foundation connections not required
- Low mobility grout rheology allows for precisely controlled placement
- To increase bearing capacity
- To arrest or reduce foundation settlements
- Mitigation of liquefaction potential
- Sinkhole remediation
- Stabilization of karstic formations







#### PERMEATION GROUTING

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# PERMEATION GROUTING

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#### WHAT IS PERMEATION GROUTING?

Permeation Grouting consists of injecting grout under controlled, under pressure in order to permeate the layers without inducing fracturing. It can be done in both soil and rock.

It is a very flexible method to ground improvement and is the common applied of all grouting techniques.

This Engineer allowed grouting technique can be used for underpinning, excavation, shoring, or a combination of the three making it a cost-effective selection to standard shoring systems.

#### **TECHNICAL DETAILS**

Permeation Grouting is also known as cement grouting loading pores in granular soil with flowable particulate grouts. The grout particle size and void size must be organized well to let the cement grout to permeate.

Depending on the circumstances, Portland cement or microfine cement grout is entered under pressure at important locations through single 'port' or multiple 'port' pipes. The grouted mass has an increased strength, stiffness, and decreased permeability.

Permeation grouting can provide an economic benefit for underpinning applications over alternative methods such as removal and replacement or piling and can be performed where access is difficult and space is limited.

#### PERMEATION GROUTING CAN BE APPLIED TO:

- Strengthen sands and gravels
- Repairing structural & rock formations
- Stop the flow of groundwater
- Stabilize soils for tunneling

### Here are some advantages of Permeation Grouting:

- Cleaner
- Faster
- Less Disruptive
- Relatively economical
- Environmentally inert







#### LIQUEFACTION GROUTING

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# LIQUEFACTION GROUTING

SROUND MODIFICATION







## WHAT IS LIQUEFACTION?

Liquefaction relates to an event where saturated, loose, cohesionless soils lose strength due to earthquake ground motion, usually resulting in critical damage to overlying formations. Whether planned or existing establishments, Geo Grout Ground Modification Specialist, Inc., can accommodate a liquefaction mitigation solution for your project.

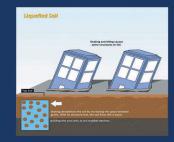
The results of liquefaction for depthless foundations include the loss of conveying capacity, excessive settlement, oblique spreading, and flow failures. In deep foundations, liquefaction can create a reduction in oblique position, additional down drag forces, and other demand on the piles from oblique developing or flow failures.

The presence of liquefiable soil does not mean the building site has to abandoned, or that deep foundation is required. In situ remediation of loose, cohesionless soils has become a standard application in geotechnical engineering. Earthquake drains can give adequate soil liquefaction mitigation by disappearing the pore pressure before approaching dangerous levels. We are actively committed to research linked to earthquake engineering. Working with owners and their geotechnical engineers, we can help in determining the optimal solution.

#### **COMMON USES:**

- Prevent liquefaction persuaded bearing capacity failure
- Manage seismic settlement
- Stop oblique spreading
- Stop decrease in deep foundation support

When seismic strengths hit full, loose, granular layers, the free soil structure contracts, allowing excess pore water pressure, followed by a reduction in soils' strength. These can cause the soil to perform as a viscous liquid.





#### POLYURETHANE GROUTING

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# POLYURETHANE GROUTING GROUND MODIFICATION







#### WHAT IS POLYURETHANE GROUTING?

Polyurethane is the method of injecting extending polyurethane grout into voided areas, inside structures or under slabs-on-grade to fill voids or relevel slabs. Polyurethane grouting is a fast, cost-effective repair process for developing settled and unstable concrete.

## How Polyurethane Grouting Works

Polyurethane is the method of injecting extending polyurethane grout into voided areas, inside structures or under slabs-on-grade to fill voids or relevel slabs. Polyurethane grouting is a fast, cost-effective repair process for developing settled and unstable concrete.

## What Polyurethane Grouting Is Best For You?

There are various times when polyurethane grouting is the only restoration method that will address a problem. Here are some of the times when polyurethane grouting is vital:

- Large slabs
- Heavy slabs
- Areas where cleanliness is important
- Sensitive or expensive surfaces
- Load sensitive areas

# Polyurethane Grouting Common Uses:

- Create barriers to water flow
- Fill Voids
- Re-level slabs
- Seal crack and joints

## Here are some advantages of Polyurethane Grouting:

- Cleaner
- Less Disruptive
- Faster
- Immediate Traffic
- Lightweight
- Waterproof







#### STRUCTURAL GROUTING

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# STRUCTURAL GROUTING

**GROUND MODIFICATION** 







#### WHAT IS STRUCTURAL GROUTING?

Structural grouting is completed to improve the performance of human-made constructions. Structural grouting usually is done in tunnels and underground structures where areas mined, a structure built, and the void between the formation and the extracted material needs to fill (contact grouting). Additionally, structural grouting can be accomplished within a structure to fill cracks or correct structural deficiencies.

# Geo Grout Ground Modification Specialists Inc., Structural Grouting

Geo Grout Ground Modification Specialists Inc. has implemented a service of structural Grouting, and GGGMS offered a full scope of services for the advice, project management and performance of the various types of grouting services. Geo Grout Ground Modification Specialists Inc. provides for its clients sufficient and full technical methods and methodology using the most up to date and particular requirements for each project, on a project by project basis.

## General Background and Structural Grouting

With 33 years reliable foundation in geotechnical activities, Geo Grout Ground Modification Specialists Inc. systems have a wealth of experience and technical knowledge of structural grouting and repair techniques that are unique in the industry.

# Common grouting programs that performed for structural causes include:

- Changed contact grouting (combined with inflow reduction)
- Annular space grouting
- Backfill grouting
- Preplaced all grouting

## Contact us today!

If your home or commercial property is undergoing from foundational deterioration or other issues call Geo Grout Ground Modification Specialists Inc. today (650) 241-2400 or email us directly at sales@gggms.com to set an appointment.







# SLOPE STABILIZATION

SHORING

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#### WHAT IS SLOPE STABILIZATION?

Slope stabilization is the protection of an inclined surface due to failure by sliding or collapsing. Slope stabilization and remediation measures may be performed by various earth retention systems, including soil nailing, soldier pile and lag, sheet piling and secant/ tangent and tieback walls.

## Slope Stabilization in the Western United States

Slope stabilization is a method that requires to be calculated and determined by a trained contractor that knows soils and how they react in their given environment. Geo Grout Ground Modification Specialists Inc. operates closely with these engineering firms throughout the Western United States. We have been in service over 33 years of reliable foundation in slope/hillside stabilization projects throughout the Western United States.

# Look out for Possible Triggers of Slope Instability

Even if your property has shown or shows no indications of slope instability, you could be at risk if it has just experienced a flood from heavy rains or melting winter snow.

### **Engineering**

Methods include the use of stone, steel, concrete and geosynthetics to stabilise or shore up slopes that are liable to landslides. These methods should, where possible, be combined with use of plants and trees to enhance the urban greenspace.

# Slope stabilization techniques include:

- Rock Slope Protection
- Slope Roughening
- Terracing
- Rounding

# Here are some advantages of Slope Stabilization:

- Stabilizes the soil
- Absorbs raindrop impact
- Reduces velocity of surface runoff
- Improves infiltration
- Prevents erosion







GEO GROUT GROUND MODIFICATION SPECIALIST

Geo Grout Ground Modification Specialists, Inc. has a wide range of techniques to provide you with the best ground improvement and structural repair solution available today. Call us at (650) 241-2400 for more detailed information on our services or email us directly at sales@gggms.com.







#### **COMMERCIAL**

Geo Grout Ground Modification Specialists, Inc. employs state of the art technology, equipment, materials, and methods and apply our high-performance standards to each and every job. We manage both large and small commercial projects promptly with determined quality and service.

#### **INDUSTRIAL**

At Geo Grout we have a documented track record handling ground improvement works for industrial buildings, providing great starts through strong floor support systems.

Warehouse structures are typically placed within poor soil areas and have a requirement for differential and complete settlement crossed ground floor slabs. Ground improvement for warehouses views optimization of the in-situ ground properties to accomplish settlement criteria, this then eliminates the need to bridge poor soil situations with structural piles and a thick structural slab.







#### **RESIDENTIAL**

For single-family home repairs, our methods are fast, non-invasive, accurate, and practically free of vibration and noise.

We can deliver our work in limited access space, whether inside or outside of the home. In many instances, a home may be raised, closing unsightly cracks, and improving other structural problems caused by the settlement.

#### **MANUFACTURING**

Our effective planning keeps projects on schedule for planned or existing plants, material handling facilities, and distribution hubs. Our situational experience throughout construction helps to ensure safe and efficient work. Our foundation methods can provide the small settlement tolerances needed by sensitive machinery to operate within specifications. Frequently construction at industrial and manufacturing plants must be performed in restricted access. Our teams safely work in overcrowded areas in active facilities with special equipment. We can mobilize instantly to your site to stabilize distressed structures so your facility can get back on task.

#### **MINING**

The range of procedures provided by Geo Grout enables it to deal with most issues related to slope stabilization, underground grouting, the formation of cut off walls to help mining activity and assist in dealing with mine tailings. Geo Grout Ground Modification Specialists, Inc., has been involved in several projects across California to facilitate transport of mining products and improve all types of mining foundations such as tanks, processing facilities, warehouses, intermodal facilities, etc.

# About us

Geo Grout Ground Modification Specialists, Inc. is a geotechnical contractor specializing in a wide range of grouting techniques solving soil and structural problems. We perform our grouting projects throughout the Western United States.

# **Our Mission**

To perform for our Clients, the highest level of quality geotechnical grouting services with professionalism, integrity and honesty. Commitment to Quality: We are committed to safely perform our services that meet or exceed all the requirements and satisfaction of our clients. Our goal is to be Your "Preferred Geotechnical Grouting Contractor".

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