Advanced
Geotech
Solutions

GEOTECH **PROCEDURES**

Slab Lift **Process**

Powerful Polumers
Painless Procedures
Rapid Results



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Slab Lift **Process**

Description

Concrete lifting with structural polymer is achieved by injecting material just below the slab, where it fills the voids and compresses the soil. After the soil has been fully compressed, the material begins lifting the slab. When slab lifting, keep in mind that you are first treating the soil then the slab can help determine the proper hole placement and shot timing to achieve the desired lift.

Tools & Equipment

Masonry Hammer Drill and Bit:
The diameter of the bits needed will vary depending on what type of gun is being used. The most common sizes are 3/8" and 5/8"

Dial Indicators:
A machinist's dial is used to detect the movement as you lift. They are extremely precise and deliver readings in increments of 0.001 inches, which allows you to track movement while lifting to prevent over lifting.

Zip Level/Laser Lever:
A level is needed when lifting large areas, especially when working on interior lifts.

Jack Attack Slab Jacks:
Slab jacks are used to help lift slabs that are bound up and aid in removing roll from sunken slabs. They are an imperative tool to have on your truck.

Alchatek Surface Guard 125:
This product is used to prevent the material from staining the concrete and surrounding surfaces.

Concrete Saw:
A saw is used to cut the joints to allow the separate slabs to move freely.

Ground Penetrating Radar (GPR):
A GPR is used to locate underground utilities, drain lines, post tension, etc.

Description

Always begin injections at the lowest point on the concrete you want to lift. Doing this allows a reference point for how high all the subsequent slabs need to be or can be lifted.

When drilling the holes try to take note of when the bit breaks through the bottom of the slab and how many inches of void are between the slab and the soil. Knowing how much void is present can help you determine the amount of time you will inject on each shot. Generally, the larger the void the longer the initial shots need to be in order to fill the void and contain subsequent shots. Holes are typically drilled in 3-4' spacings to create a continuous lift and ensure that there are no pockets of voids.

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As you are injecting, material is typically pumped for 3–15 seconds with 3-7 second intervals between shots. The length of each shot is determined by the thickness of the slab, the amount of void and the desired amount of lift. While injecting it is very important to be aware of how quickly material is setting up, as waiting too long between injections can result in a blowout at the gun. Blowouts typically require significant clean up, as any foam that is not removed will turn a dark yellow color when exposed to sunlight. Using the Alchatek Surface Guard 125 stain preventer can speed up the cleanup process and alleviate staining on all types of surfaces.

When drilling holes, try to stay a minimum of 18-24 inches away from joints and the edges of the slab. This will help minimize the amount cleanup and waste from material that escapes from under slab.

When injecting on sidewalks or other small slabs, you must reduce the length of your shots and allow the material plenty of time to expand before injecting more material. Injecting too quickly can result in a mess from material escaping the slab, over lifting, and lifting where you don't want lift

Always ensure that pressures on the machine are as close to even as possible. Imbalanced material will not lift properly and typically reacts slower than normal.

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Procedure Steps

1. Identify the slab that needs lifted and where it is sinking.

2. Ensure there are no binds that could prevent the slab from lifting or causing damage. (New siding, replacement slabs, railing or structures)

3. Drill holes. Holes are generally placed at the lowest point of the sunken slab and 18-24" inches from open joints.

4. Spray Alchatek Surface Guard 125 stain preventer around the injection hole, on any joints and on any nearby surfaces that you want to keep clean. (Apply additional stain preventer as needed)

5. Begin injecting. You will inject material for 3-10 seconds with 3-5 second intervals between shots. Larger slabs and voids will require more material to lift than small slabs. The slab will typically begin lifting within the first few shots and may speed up and slow down while injecting. As the the concrete begins to lift and get close to the desired stopping point, you must slow down your shots and wait for the material you have injected to expand to prevent over lifting. (If you are using the AS Mixmaster gun, you must use the water purge within 7-10 seconds of the final injection or if you plan to wait longer than 10 seconds before shooting again.)

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6. If the slab you are lifting is more than a few feet wide you will need additional holes. Subsequent holes are drilled 3-4' from your initial hole and shot in the same manner. When lifting larger slabs, the lift will typically feather its way down the slab as you move your injections down the slab.

7. After the slab has been lifted you must clean up any material that got on the concrete or other surfaces to prevent staining.

8. Patch your holes with hydraulic cement.

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