

Alchatek

CASE STUDY
GRAVEL WALL STABILIZATION

BRICK RETAINING WALL GREENVILLE

Gravel Wall *Stabilization*

An old brick retaining wall in downtown Greenville collapsed and crushed three cars, requiring stabilization of the embankment and installation of a new wall system.

AP FILL 720 USED
50 *gallons*

PRODUCT
AP Fill 720

I · THE PROBLEM

01 What made this job *difficult.*

BRICK RETAINING WALL
GREENVILLE

There was one area where a portion of the brick wall needed removal, but the temporary concrete retaining wall to protect the property had been poured on a bed of gravel that was being held in place by the remaining brick. The gravel under the temporary wall footing was contained by the remaining brick, which when removed would cause all of the gravel to run out. This section was about 30-35' long, 2' high, and 4-5' deep from the face of the wall to the back.

THE CONSTRAINT

30-35 *ft*

LENGTH OF GRAVEL SECTION

KEY CONDITION

Removal of the remaining brick would cause the contained gravel to run out from under the temporary wall footing.

AT A GLANCE

50 gallons AP FILL 720 USED	18 in PROBE SPACING	2 gallons POLYURETHANE PER PROBE	5 % CATALYST MIX

02 What was specified, *and how it went in.*

AP FILL 720

The contractor selected AP Fill 720 to permeate the gravel and hold it in place while the brick was removed. With the gravel locked in place, the crew was able to install supplemental support jacks under the temporary retaining wall. After the jacks were in place, they were able to install the soil nails followed by the shotcrete.

THE MATERIAL

AP Fill 720

AP FILL 720

Uncured appearance: brown liquid. Viscosity at 77°F (25°C) (ASTM D4878-98): ± 215 cP (± 215 mPa.s). Density (ASTM D3505-96 [2000]): ± 65.9 lbs/ft^3 (± 1.12 kg/dm^3).

THE METHOD

01
Space
Injection probes were spaced 18" apart to ensure proper permeation and coverage needed to create one solid mass.

02
Inject
The crew came in at a steep 20 to 30-degree angle behind the brick and put in about 2 gallons of polyurethane per probe, with 5% catalyst mixed in.

03
Supplement
The crew then installed more probes at a shallow 60-degree angle in areas that needed further permeation and coverage, at approximately 2 gallons per probe.

04
Complete
This entire process took one day to complete with a small crew of three people.

LOCKED IN PLACE

AP Fill 720 permeated the gravel and held it in place while the brick was removed.

With the gravel locked, the crew installed supplemental support jacks under the temporary wall, then the soil nails and shotcrete.

SMALL CREW

The entire process took one day with a crew of three people.

03 What the result was, *and what confirmed it.*

TO COMPLETE GROUTING

The day after grouting, the site work demolition subcontractor chiseled off the remaining brick from the solidified AP Fill 720 gravel wall - and the project was determined to be a complete success. The entire job was finished quickly with minimal mobilization costs.

TO COMPLETE GROUTING

1 *day*

The entire job was finished quickly with minimal mobilization costs.

WHY IT STARTED

An old brick retaining wall in downtown Greenville collapsed and crushed three cars.

The embankment had to be stabilized before a new wall system could be installed.

THE DAY AFTER

The demolition subcontractor chiseled the remaining brick off the solidified AP Fill 720 gravel wall.

START THE CONVERSATION

Send us the job.
We will send back an approach.

Send us the soil report or the failure photos and Technical Services will return a written approach within two business days.

TECH SUPPORT

404 · 618 · 0438

WWW.ALCHATEK.COM

Alchatek

Alchatek manufactures polyurethane resins, chemical grouts, and injection equipment for infrastructure repair: leak sealing, soil stabilization, concrete lifting, and seawall repair. Headquarters in Tucker, Georgia, with a bonded warehouse in Reno, Nevada.

Information in this document is believed accurate at the date of publication. Product performance depends on site conditions and application; consult the current Technical Data Sheet, which is the controlling document.

ALC-CS-XX-045
DRAFT V0.1 · SEPT 2026