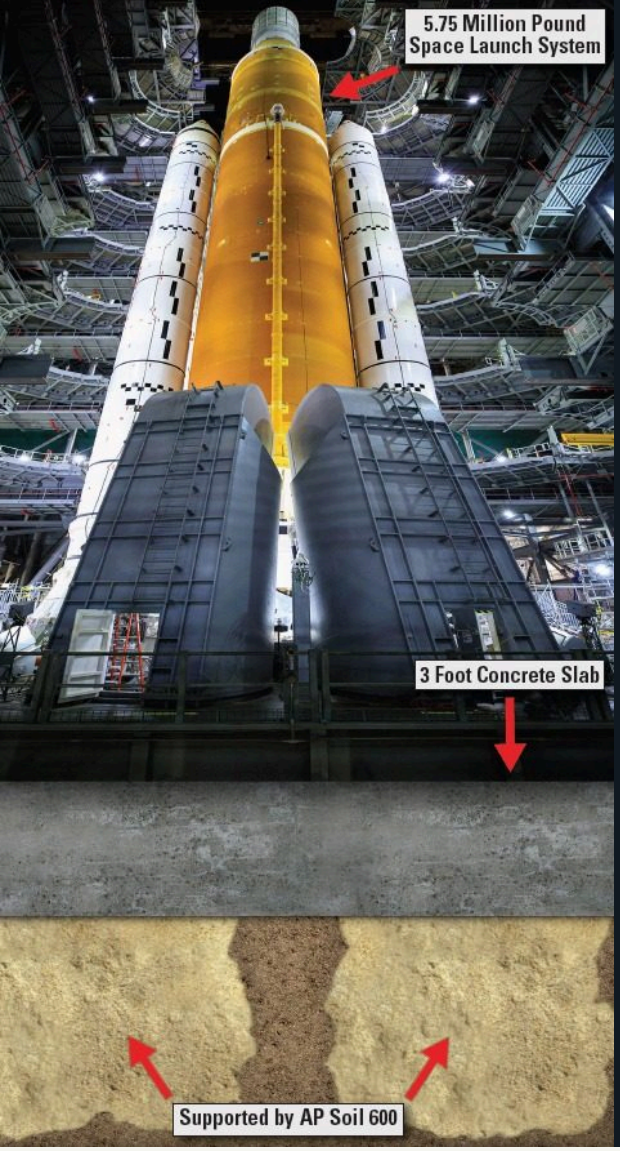


Alchatek

CASE STUDY
SOIL STABILIZATION

SLAP STAND STRUCTURE ALONG A TRANSFER AISLE IN THE VEHICLE ASSEMBLY BUILDING (VAB) CAPE CANAVERAL, FLORIDA

Stabilizing a 5.75 Million Pound *Space Launch System*

A heavily loaded slap stand planned for the Vehicle Assembly Building needed reliable subsoil support beneath the ground-level floor slab.

SPACE LAUNCH SYSTEM
5.75 *million lb*

PRODUCT
AP Soil 600

I · THE PROBLEM

CASE STUDY · 01

01 What made this job *difficult.*

SLAP STAND STRUCTURE ALONG A TRANSFER AISLE IN THE VEHICLE ASSEMBLY BUILDING (VAB) CAPE CANAVERAL, FLORIDA

In Cape Canaveral, Florida, a heavily loaded slap stand structure was planned for construction along a transfer aisle in the Vehicle Assembly Building (VAB). This slap stand would be critical in servicing the proposed Space Launch System vehicle (SLS). However, the project faced a significant challenge when it was discovered that the near-surface subsoils consisted of loose fill materials susceptible to further densification and volume loss due to vibrations and water infiltration. With the slap stand tentatively designed to bear directly upon the ground-level floor slab of the VAB, the degree of subsoil support beneath the floor slab section became a critical concern.

KEY CONDITION

Near-surface subsoils consisted of loose fill materials susceptible to further densification and volume loss due to vibrations and water infiltration.

AT A GLANCE

2 ft	5 ft	50 psi	15 gal/ft
INJECTION POINT SPACING center-to-center across each slap stand area	**INJECTION DEPTH** below the floor slab grade	**INJECTION PRESSURE** relatively low pressure	**GROUT VOLUME** per injection point

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

AP SOIL 600

To address this issue, the geotechnical engineer of record recommended a ground improvement solution using permeation grout. A leading soil stabilization contractor worked alongside the geotechnical design team to develop a permeation grout program that would meet the building code load criteria. AP Soil 600, a high-strength, hydro-insensitive structural polyurethane foam, was selected as the ideal product for this project due to its exceptional ability to support heavy structures.

THE MATERIAL

AP Soil 600

STRUCTURAL POLYURETHANE FOAM

A high-strength, hydro-insensitive structural polyurethane foam.

THE METHOD

01
Install
Installed permeation grout injection pipes on a center-to-center spacing of approximately 2 feet across each of the slap stand areas.

02
Drive
Injection points were driven to a depth of at least 5 feet below the floor slab grade.

03
Inject
Grout was injected at a relatively low pressure (less than 50 psi), and grout needles were slowly withdrawn during pumping to ensure a uniform distribution of grout to about 3 feet below the bottom of the slab level.

04
Control
The amount of grout used was carefully controlled, with less than 15 gallons per foot per injection point.

WHY AP SOIL 600

Selected for its exceptional ability to support heavy structures.

A high-strength, hydro-insensitive structural polyurethane foam, placed through a permeation grout program developed to meet the building code load criteria.

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

CONCRETE SLAB

The permeation grout project was a resounding success, effectively improving the load-bearing capacity of the existing soils at the site. The precise application of AP Soil 600 ensured that the slap stand structure would have a stable and reliable foundation, allowing for the safe and efficient servicing of the Space Launch System vehicle. Thanks to the contractor's expertise and the power of AP Soil 600, this piece of critical infrastructure in Cape Canaveral was reinforced and readied for countless future space exploration missions.

CONCRETE SLAB

3 *ft*

THE STAKES

The slap stand would be critical in servicing the Space Launch System vehicle.

Designed to bear directly on the ground-level floor slab of the Vehicle Assembly Building, it depended on the subsoil support beneath that slab.

ENGINEER OF RECORD

The geotechnical engineer of record recommended a ground improvement solution using permeation grout.

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

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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.