PRESTO | GEOSYSTEMS®

AIRPORT INFRASTRUCTURE

GEOWEB®
3D Soil Stabilization

Application
Resource Package



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GEOWEB® 3D Soil Stabilization

Airport Resources

What You Will Find

Key Airport Applications

Runways & Taxiways- Benefits Under Pavement

- Landing Strip Case Studies

Stabilized Grass Shoulders

- Soft Shoulder Repair Case Study

Deicing Pad Drainage Layer

- Deicing Pad Case Study

Stormwater & Fuel Runoff Containment

- Runoff Containment Case Study
- Channel Case Study

Channel Protection & Sound Barrier Walls

Free Project Evaluation

Environmental Benefits

Installation Support

Contact Us



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Better Built Airport Infrastructure

GEOWEB®

3D Soil Confinement

This resource package outlines attributes and applications of the GEOWEB® 3D system in airport infrastructure design—for runways, taxiways and shoulders, deicing structures, containment ponds and channels.



Resources
for your project

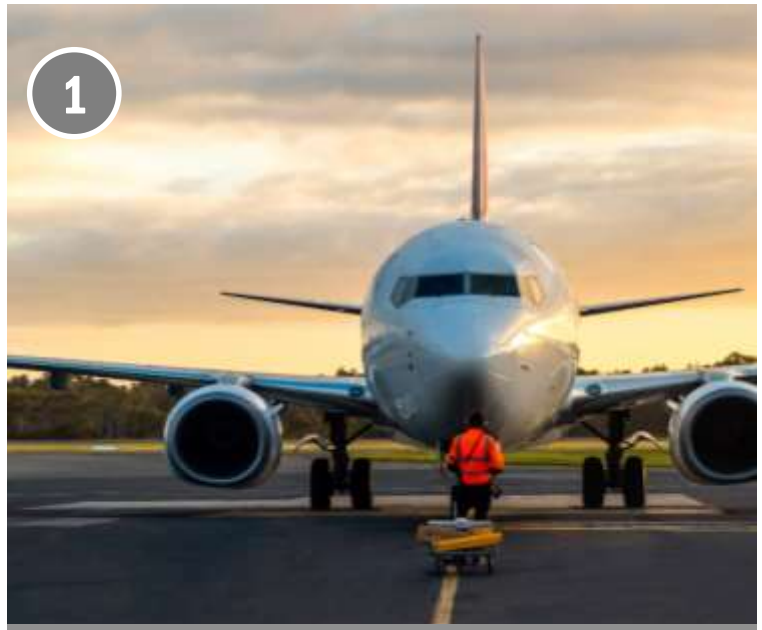
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Key Applications

GEOWEB®
3D Soil Confinement

Take the Tour.

See how 3D soil confinement benefits the most challenging site issues in airport applications at a lower cost and with higher performance than alternative solutions.



Runway, Taxiway & Shoulder Stabilization



Deicing Structures



Containment Ponds



Channel Protection & Sound Walls

Runways, Taxiways & Shoulders

With acres of pavements to maintain, a stable base for airport runways, taxiways, and shoulders to handle constant, heavy loading from aircraft and maintenance vehicles is critical to pavement performance.

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BENEFITS

Delivered by the 3D GEOWEB® System

Resources for your project

Runways & Taxiways

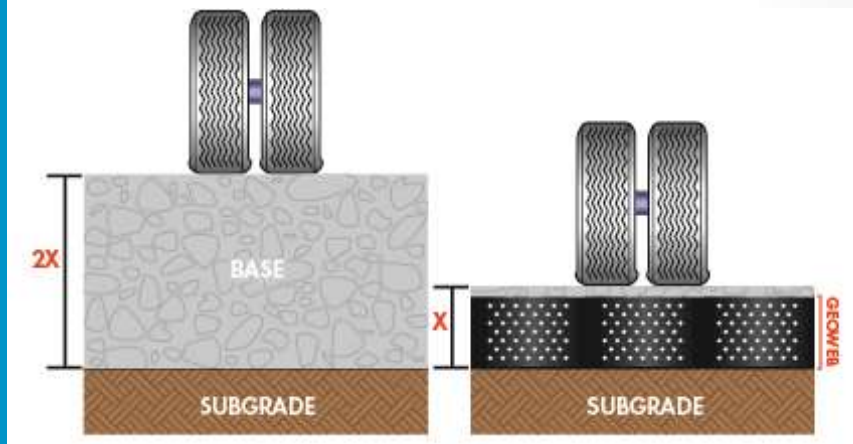
Extends Airport Pavement Life

Airport pavements designed to support heavy aircraft & vehicle loads require a stable base to maintain pavement performance. **This can be challenging**-- especially in areas with soft soils and poor soils prone to settlement.

The GEOWEB® 3D confinement system:

- stabilizes the pavement base layer with **50% less cross-section**, and offers a more stable base that results in longer pavement life.
- is an effective base stabilization system as well as surface protection for unpaved shoulders and access ways.

50%
Less Cross Section



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How 3D Soil Confinement

BENEFITS

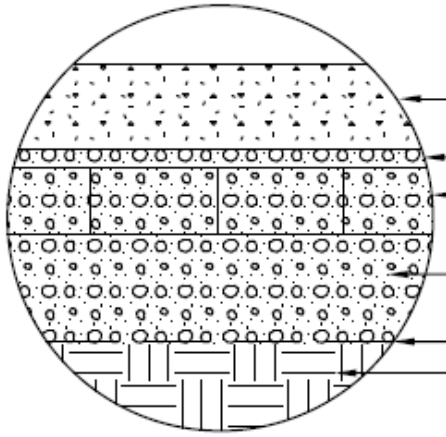
Resources for your project

Under Hard-Surface Pavements

The GEOWEB® 3D confinement system:

- encapsulates and strengthens fill in the HDPE cellular network.
- is an inert, corrosion-resistant, low environmental impact material.

Pavement layer design is based on subgrade strength, loading and desired surface layer.



DETAIL B

PAVEMENT BASE STABILIZATION



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3D Soil Confinement

BENEFITS

Resources for your project

Under Hard-Surface Pavements

Typical Pavement Problems:

- Unsupportive subgrades, especially subgrades with low CBR—as well as repeated heavy loading, snow melt and other stresses--result in pavement degradation, high maintenance, and eventual pavement failure.

Pavement Problems



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3D Soil Confinement

BENEFITS

Resources for your project

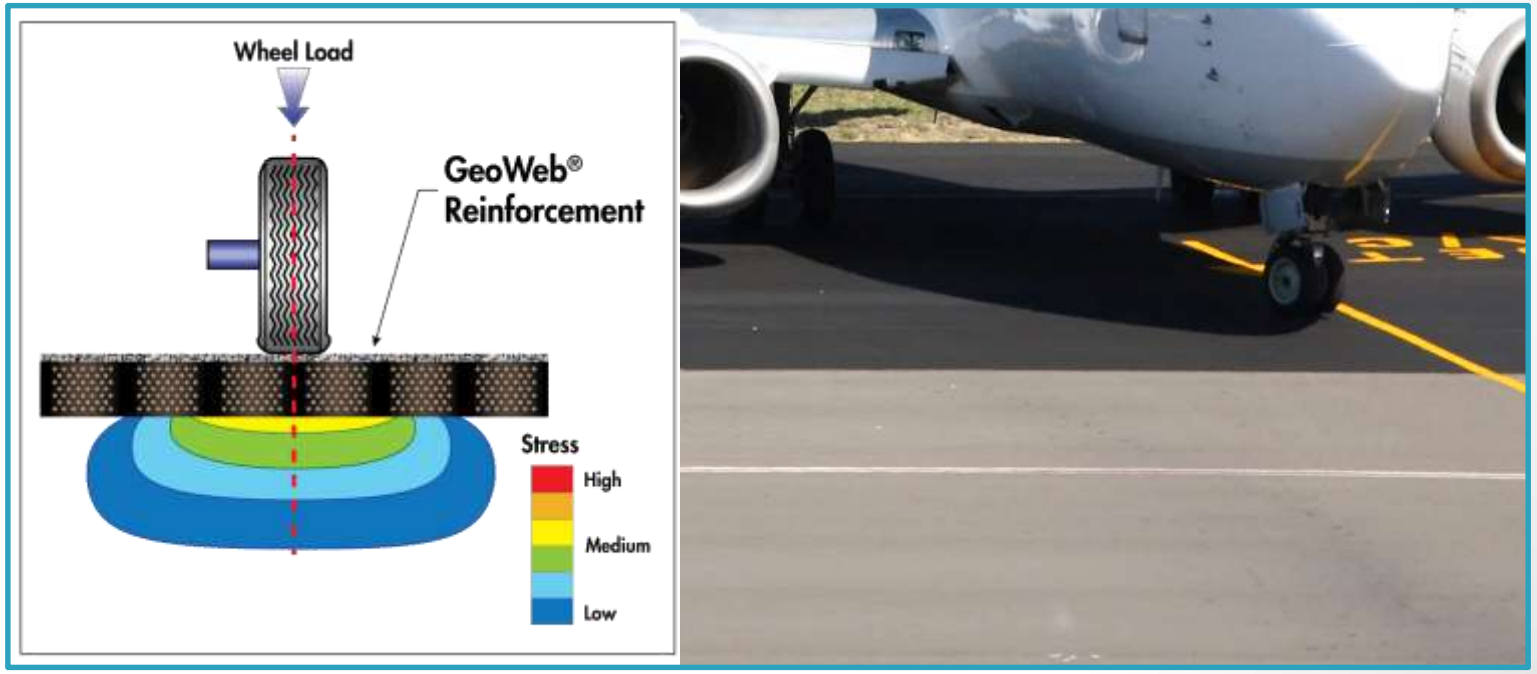
Under Hard-Surface Pavements

GEOWEB® Stabilized Base:

- With the GEOWEB® 3D pavement base layer stabilized, **loading stress is better distributed** under the overlying asphalt and concrete layer—**significanty reducing pavement deterioration.**

A better built base results in a longer pavement life.

GEOWEB® Base Reinforcement



CASE STUDY

Shishmaref Landing Strip, Alaska

Resources
for your project

Remote Area Runway

Use of Onsite Fill

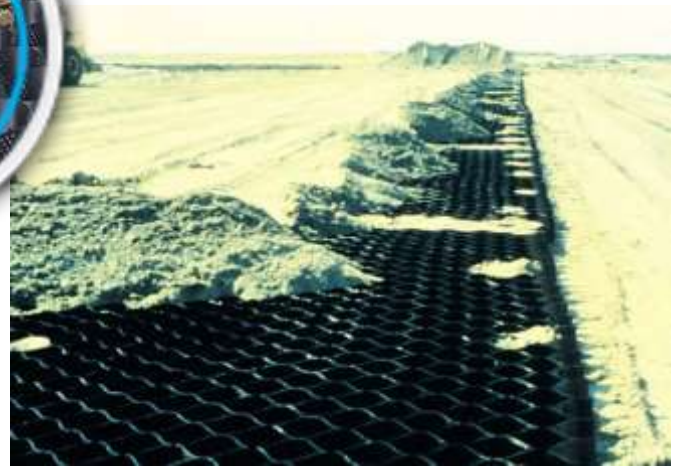
- Airstrip for DC-6 and Hercules Aircraft
- GEOWEB® system used to stabilize the base of a 60 ft. x 3,000 ft. runway.
- Emulsified asphalt placed over the sand-infilled GEOWEB system,

Infilled with onsite sand fill











See More
on Runway Stabilization>>

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CASE STUDY

Camp Atterbury, Indiana

Resources
for your project

Military Base

Base Stabilization

- GEOWEB base stabilization of a 200,000 sm (2,000,000 sf) landing strip area.
- Operational for 83,300 lb (dual wheels) gear load C130 aircraft.
- 8 inch deep GEOWEB material.

See More
on Shoulder Stabilization>>

Infilled with Crushed Aggregate











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BENEFITS

Delivered by the 3D GEOWEB® System

Resources
for your project

Shoulder Stabilization

Stabilized Grass 'Pavements'

Natural grass shoulders are vulnerable to deep rutting caused by occasional contact from equipment, vehicles and airplane tires, resulting in **frequent maintenance and unsafe conditions.**

The GEOWEB® 3D confinement system:

- with engineered fill, creates a stabilized grass pavement layer that resists concentrated rutting and damage from traffic wheel loads.



BENEFITS

Delivered by the 3D GEOWEB® System



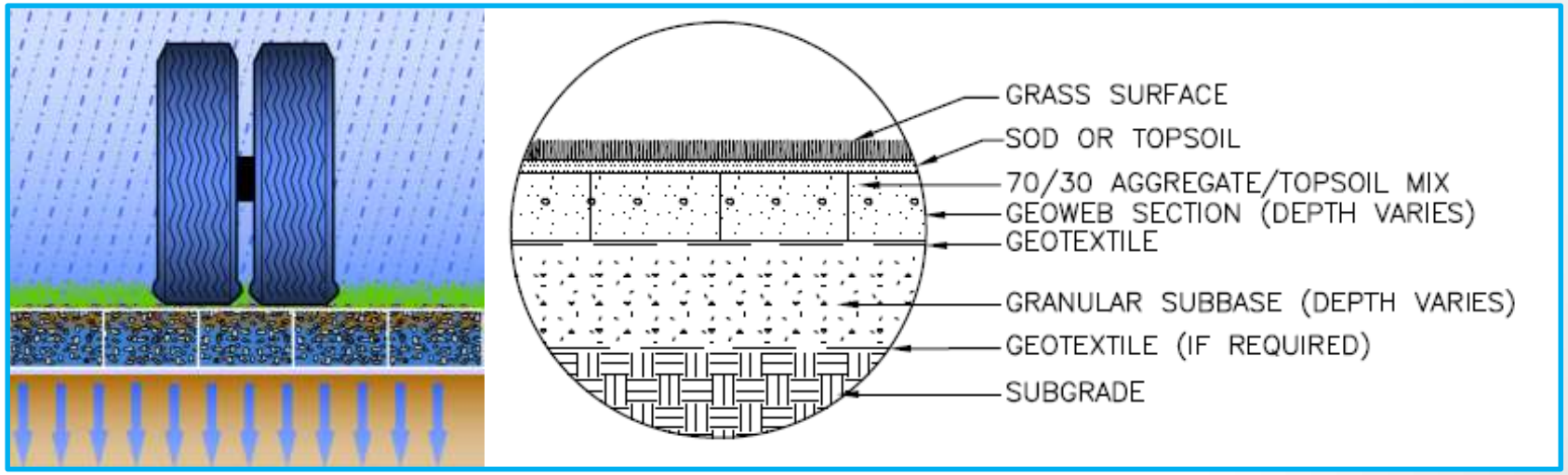
Resources
for your project

Stabilized Grass Surface

Natural Infiltration & Runoff Reduction

The GEOWEB® 3D confinement system:

- infiltrates stormwater runoff extremely fast—reduces accumulation of water/ice on the adjacent hard-surface pavement.
- may be designed with additional cross section for stormwater storage.



CASE STUDY

Grand Canyon Airport, Arizona

Taxiway Shoulder

Soft Shoulder Repair

- Shoulder problems caused by poor subgrades and snow melt.
- GEOWEB 3D system infilled with granular material & topsoil, and compacted.
- Grassed surface.

See More
on Shoulder Stabilization>>











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Deicing Pad Drainage Layer

Structure Stabilization & Containment of Airport Fluids



Resources for your project

Airport Environmental Protection

Airports take careful measures to capture, contain, and treat deicing fluid and fuel runoff.

The **GEOWEB® system** plays an important role in helping to **stabilize the aggregate base layer** and **conveying the deicing fluid** through the contained aggregate voids.

LEARN MORE

CASE STUDY

Cleveland International Airport, Ohio

Deicing Pad Drainage Layer

Project Scope:

GEOWEB® 3D system utilized for a **1.4 million sq ft (30 Acres**) deicing pad at Cleveland International Airport.

Project Engineer:

R.W. Armstrong

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CASE STUDY

Cleveland International Airport, Ohio

Deicing Pad Drainage Layer

Project Details:

The GEOWEB® 3D system serves as a construction support platform over marginal subgrades and a highly-permeable structural drainage layer.

- creates a structurally-stable aggregate conveyance system.
- protects the impervious membranes that prevent the possibility of groundwater contamination.

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Confinement allows use of highly porous, open-graded aggregate.



CASE STUDY

Cleveland International Airport, Ohio

Resources
for your project

Deicing Pad Drainage Layer

"The deicing pad and the type of collection system we are creating will be more efficient than what is required to meet our permit obligations".

Project Mgr, R.W. Armstrong, Deicing project.

Read Full Project Article Case Study >>



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Stormwater & Fuel Runoff Containment

Geomembrane Protection & Containment Basins



Airport Environmental Protection

Stormwater containment basins built with impervious liners prevent infiltration of jet fuel and other runoff of contaminants into the groundwater.

The GEOWEB system **covers and protects geomembranes** from puncture and solar degradation.

LEARN MORE

CASE STUDY

Pittsburgh Int'l Airport, Pittsburgh, PA





Jet Fuel Containment

Contaminated Runoff & Spill Management

Project Scope:

Protection of a detention pond serving as a collection area for the airport's stormwater and potential contaminated runoff or spills.

- Concrete–filled GEOWEB® protection of a Geosynthetic Clay Liner (GCL)—Double-layered defense for containment and erosive effects from runoff.

See Jet Fuel Case Study >>

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CASE STUDY

Billings Int'l Airport, Billings, MT

Stormwater Channels & Containment Ponds

Erosion Protection on Open Channels & Storm Water Ponds

Project Scope:

- Project part of the Airport's **Stormwater Improvement Plan.**
- GEOWEB® sections are placed over a geosynthetic clay liner (GCL) on the perimeter of the stormwater detention pond.
- With concrete infill, delivers 'flexible' hard-armored protection to the GCL.

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CASE STUDY

Billings Int'l Airport, Billings, MT

Stormwater Channels & Containment Ponds

Project Scope:

For the stormwater channels and weirs, open-graded aggregate fill offers permeable, hard-armored protection.

- Installation is fast and efficient with corrosion-resistant ATRA® connection keys.

See Billings Airport Case Study >>









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Natural Sound Barrier Walls

Structurally-Sound Vegetated MSE Walls

Environmental Noise Protection

Airport and Federal Aviation Administration (FAA) officials are challenged to find ways to reduce traffic noise in and around airports that fit naturally into the built communities.



Application Overview

Resources
for your project

Sound Barrier Walls

Reduce Environmental Noise

GEOWEB® walls act as noise barriers—absorbing sound through the system's open-celled structure, natural fill and vegetation—unlike hardscape walls that reflect rather than absorb sound.

Natural vegetation is also a **lower environmental impact solution** for cities:

- Cooler surface reduces the heat island effect.
- Open facia infiltrates rainwater and stormwater to reduce runoff.



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Customized Design Support

Resources for your project

Let Us Evaluate Your Project

Your site has problems. We can help.

We work closely with airport consultants to evaluate the feasibility of our solutions to economically and technically meet each site's unique challenges.

Our **free project evaluation** considers specific site conditions, loading stresses, and requirements to contain and control water and contaminants.

Email info@prestogeo.com to request a project evaluation meeting.

Request Free Project Evaluation>>



PRESTO GEOSYSTEMS®

Installation Support

Installation Training

Our experienced technical staff supports airport contractors and owners with pre-construction training and construction oversite.

Waste no time on site.

Let our experienced staff train your crews—keeping your operations moving efficiently and your costs down.

Email info@prestogeo.com to request construction training & site support.

Request Technical Meeting & Presentation>>







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GEOWEB® projects for airports offer a low environmental impact solution for reducing energy and land use, preserving resources and water quality, and storing water and airport fluids.



Environmental Benefits Green Sheets

Energy Use **Resource Savings** **Land Use** **Water Benefit**

Download Green Sheets

Load Support for Runways, Taxiways, Shoulders & Deicing Pads>>

Stormwater Containment>>

Channel Protection>>

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Let Our Knowledge Work for You

Resources
for your project

40+ Years Experience

Put our Experience to Work on Your Project

The GEOWEB® system is the original—and most advanced geocell on the market. We advance the technology through research and development to make better solutions that benefit projects in all aspects of transportation.

Let our knowledge & experience help you solve your airport site challenges.

Higher Performance and Less Maintenance.

A better built infrastructure.

LEARN MORE



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GEOWEB®

3D Soil Stabilization

Build with Certainty.

Get answers to your questions and help before, during and after construction.

Rely on our experience, tools & resources to help you get in and out of sites faster—and to build safely!



Certainty and Peace of Mind—from project start to finish.

Contact Us 1-920-738-1328 | www.prestogeo.com