

GEOPIER®

INTERMEDIATE FOUNDATION® SOLUTIONS



GEOPIER IS GROUND IMPROVEMENT®

Tensar® | **GEOPIER®
FOUNDATIONS**

“By using Geopier® technology, we were able to create good soils out of bad soils.”

- Kent Megorden, Project Manager, Three-level parking deck in Georgia

ABOUT GEOPIER

Today's building sites are often challenged by variable and complex soil conditions that require improvement. Geotechnical engineers like the ones working at Geopier search for cost-effective, reliable solutions to those problems. Historically, deep foundations and over-excavation were used to improve poor soils, or “bad ground.” Over two decades ago, Geopier Foundation Company developed its first system to serve as an alternative to deep foundations and over-excavation. The Rammed Aggregate Pier® (RAP) system provided an efficient and cost-effective Intermediate Foundation® solution for the support of settlement sensitive structures.

Through continual research and development, we've expanded our system capabilities. Thousands of structures worldwide are currently supported by Geopier technologies – GP3®, Impact®, Armorpack® and Densipact® systems. This is proven experience that Geopier ensures high levels of performance and reliability while providing value compared to traditional systems. Expanding offerings to meet your challenges, Geopier added SRT™ technology to its traditional ground improvement solutions, providing low-impact slope stabilization services for the first time. In addition, GeoConcrete™ columns provide a cost-effective solution to support heavy applied loads and control settlement.

Geopier's design-build engineering support and site-specific modulus testing, combined with the experience of providing settlement control for thousand of projects, provide an unmatched level of reinforcement and reliability for virtually any soil type and groundwater condition across many applications.

GEOPIER SYSTEMS

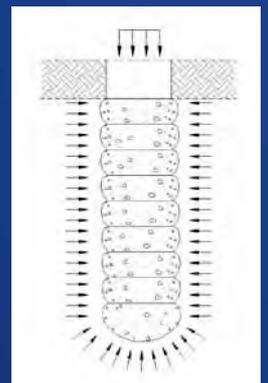
- ▶ GP3
- ▶ Impact
- ▶ Armorpack
- ▶ Densipact
- ▶ GeoConcrete Columns
- ▶ SRT

APPLICATIONS

- ▶ Foundations
- ▶ Floor Slabs
- ▶ Liquefaction Mitigation
- ▶ Industrial Facilities
- ▶ Storage Tanks
- ▶ MSE Walls & Embankment Support
- ▶ Slope Stabilization
- ▶ Uplift
- ▶ Wind Turbines

BUILDING IN CONFIDENCE WITH RAMMED AGGREGATE PIER SYSTEMS

Geopier Rammed Aggregate Pier™ systems are used to reinforce good to poor soils, including soft to stiff clay and silt; loose to dense sand; organic silt and peat; variable, uncontrolled fill; and soils below the ground water table. They are engineered, designed and installed exclusively by representatives of Geopier. Our patented RAP technologies are constructed by applying direct vertical ramming energy to densely compact successive thin lifts of high quality crushed rock to form high stiffness engineered elements. The vertical ramming action also increases the lateral stress and improves the soils surrounding the cavity, which results in foundation settlement control and greater bearing pressures for design. Depending on site requirements, RAP systems can be installed using replacement or displacement methods.





GEOPIER GP3 SYSTEM

The original Geopier system was developed in 1989 as an efficient and cost-effective Intermediate Foundation solution for the support of settlement sensitive structures. Today, the patented Geopier GP3® system uses replacement (drilled) Rammed Aggregate Pier (RAP) elements to reinforce good to poor soils, including soft to stiff clay and silt, loose to dense sand, organic silt and peat, and variable, uncontrolled fill. Like the original Geopier system, the GP3 system allows for visible inspection of the spoils, and the opportunity to address changing ground conditions as they happen. However, advances in the process provide even greater efficiency and economy than the original system. GP3 is an effective alternative for massive over-excavation and replacement or deep foundations, including driven piles, drilled shafts or auger cast-in-place piles.

KEY PROJECTS

- ▶ Medical Center of Southeast Texas
- ▶ Carroll Wind Farm, IA
- ▶ Castle Oil Bulk Diesel Storage, NY
- ▶ Big River Resources Ethanol Plant, MO
- ▶ Amtrak Platform, RI
- ▶ Sienna Parkway MSE Wall, TX
- ▶ Marquee Condominiums, CA



“Would I consider a Geopier system in the future?

Absolutely!”

- Jerry Perry, General Contractor,
Office space in Florida



GEOPIER IMPACT SYSTEM

The Geopier Impact® system uses a patented displacement mandrel to reinforce good to poor soils, including loose sand, soft silt and clay, mixed soil layers, uncontrolled fill, contaminated soils and soils below the groundwater table. The displacement process allows for installation with no spoils and eliminates the need for casing. Its performance and cost-effectiveness make it the ideal solution for soils that are subject to caving.

“ We were looking for speed and predictable cost, and we found that with Geopier technology. ”

- Jeff Garrett, Regional Project Manager, Apartments in Georgia



“ The Impact system doesn't generate spoils, so there are fewer equipment and transportation needs, which also provides a cost benefit. ”

- Ken Lightbody, Project Manager, Student housing complex in Maryland

KEY PROJECTS

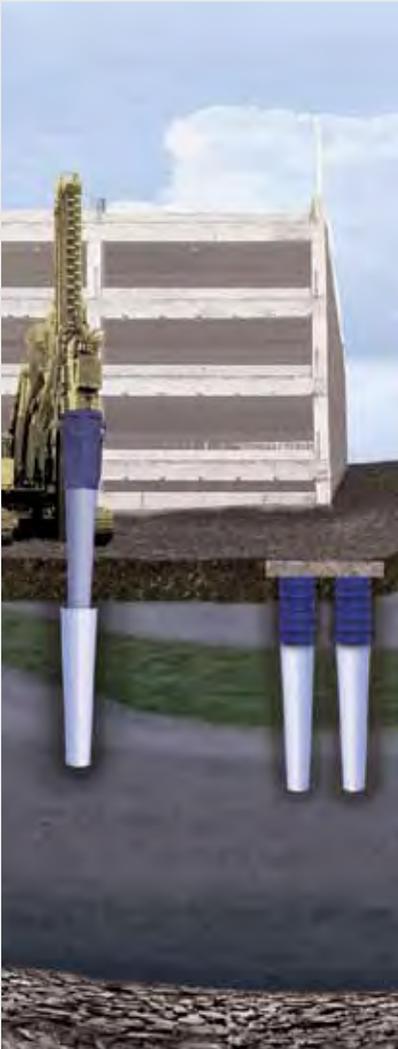
- ▶ Bogazici Shipyard, Turkey
- ▶ KIA Auto Manufacturing Facility, GA
- ▶ Kinder Morgan Liquid Tanks, TX
- ▶ Purzien Wind Park, Germany
- ▶ BMW Dealership, UT
- ▶ Large Power Plant, MD

GEOPIER ARMORPACT SYSTEM

The Geopier Armorpack® system is a cost effective solution for supporting buildings and structures in soft clay and organic soils. Construction begins by driving a patented Armorpack sleeve to the design depth. Aggregate is placed within the confining sleeve and compacted with the mandrel. Applied loads are supported by the densely compacted aggregate that is laterally confined by the sleeve. The system provides greater economy for settlement control in soft, compressible soils.

KEY PROJECTS

- ▶ CarMax Auto Superstore, SC
- ▶ Automated Freezer Warehouse, IA
- ▶ Elven Sted Apartment Buildings, WI



GEOPIER DENSIPACT SYSTEM

The Geopier Densipact® system is an efficient and cost-effective Intermediate Foundation® solution for the support of settlement-sensitive structures. The patented Densipact system is cost-effective for improvements of loose to medium dense granular soils (SP, SP-SM, SM) where an increase in soil density is desired for settlement control and liquefaction reduction.

KEY PROJECTS

- ▶ Rochling Auto Plant, OH
- ▶ Clarksville Grain Bin, IA
- ▶ Park Summit Apartments, MN



“ Geopier performed their critical path soil improvement work in less than three weeks, ensuring that the 16-month construction schedule would be completed on time.”

- Glenn Hofer, Project Executive, Apartment building in Minnesota

“ Small, mobile equipment allowed for work to be performed directly on the slope with no interruption of regular traffic patterns. ”

- CE News, August 2013

GEOPIER SRT SYSTEM

The Geopier SRT™ system is an efficient and cost-effective solution for the stabilization of new slopes and active slides up to 15 feet thick. The patented system is comprised of Plate Pile™ elements, vertical steel reinforcements that are rapidly driven through unstable soil into a competent layer. The Plate Pile elements are designed and installed in a staggered spacing based on slope grades and soil properties. The closely spaced elements form a series of horizontal barriers where the soil arches between the plates, forming a continuous line of resistance against downslope movement. The Plate Pile elements transmit slide forces to the underlying stable soil to resist lateral movements and increase the factor of safety against instability.

The Geopier SRT system is designed to stabilize slopes where the soil conditions consist of an upper zone of weathered, loose, soft or disturbed soil over a stable zone of soil or soft rock. Plate Pile installations are fast and allow for immediate stabilization without the need for massive earthwork and site disruption. The Geopier SRT system is ideal for shallow slides or constrained sites.



GEOPIER GEOCONCRETE COLUMNS

Geopier GeoConcrete™ columns (GCC's) provide a cost-effective solution to support heavy applied loads and control settlement at sites with weak and compressible cohesive and organic soils overlying dense soils or rock. The system provides this reinforcement by combining high modulus elements within the low modulus soil to control settlements. GeoConcrete Columns are an effective replacement for deep foundations including driven piles, drilled shafts or augercast-in-place piles.



KEY SRT PROJECTS

- ▶ VDOT HOT Lanes Slope Reinforcement
- ▶ New Madrid Power Plant
- ▶ Pleasant Hill Slide Repair

KEY GCC PROJECTS

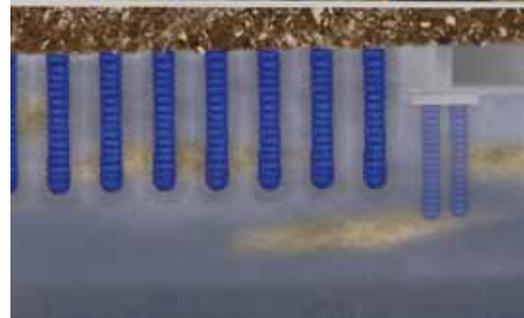
- ▶ 11th Street Bridges
- ▶ South Dundas Wind Projects



GEOPIER®

“ Sure, soil has been around since a long time before any of us existed, and we won't change that. But we can change what we do with it. New ways to compact, new ways to reinforce, new ways to reuse with less environmental impact... the potential is boundless. When innovative ideas rise to the surface, new ingenious solutions are created. That's what brings you value and allows you to win.”

- Dr. Kord Wissmann, President,
Geopier Foundation Company



Geopier is ground improvement.

Work with engineers worldwide to solve your ground improvement challenges.
For more information call [800-371-7470](tel:800-371-7470), email info@geopier.com, or visit geopier.com.

Tensar® | **GEOPIER**®
FOUNDATIONS

Geopier Foundations
130 Harbour Place Drive
Suite 280
Davidson, NC 28036