

IDP Terrapier®

Terra Technologies

Engineered Ground Improvement by TerraSystems



Xfinity Live!, Philadelphia, PA

DID YOU KNOW ?

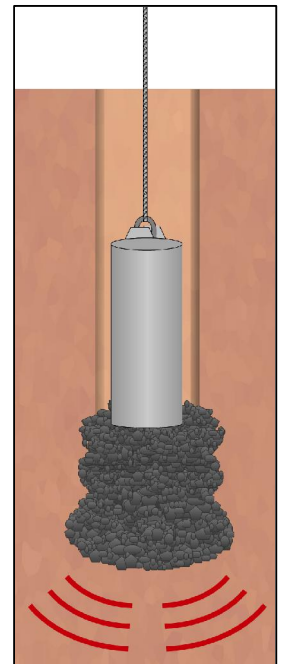
TerraSystems utilizes various techniques for installing aggregate piers, including our DHT Terrapier® using down-hole tampers, our Vibro Terrapier® using powerful vibrators, and our IDP Terrapier® using high-energy deep impacts.

The DHT Terrapier® Difference

The Impact Densification™ Pier (IDP) technology was developed to combine the benefits of aggregate pier technology and dynamic compaction technology. It is the only system that uses large energy impacts to densify and prestrain the subsurface layers below the depth of the piers. With this unique technique settlement below the base elevation of the aggregate piers can be greatly reduced or eliminated. It can be used in any soil type where a hole can be augered, including silts, clays, organic deposits and most sands.

The energy levels that are generated by the high-energy impacts are approximately a **hundred times** higher than with conventional aggregate pier construction techniques. Although limited soil densification occurs with other aggregate pier installation techniques, IDP ramming technology is a soil densification process that also produces an aggregate pier. The aggregate pier-soil matrix is **much stronger** than with any other aggregate pier installation method, resulting in superior settlement control and higher bearing pressures.

The IDP technique has been used on projects with column loads varying from 50 Kips up to 5,000 Kips.



IDP Terrapier®

TERRASYSTEMS
GROUND IMPROVEMENT

IDP Terrapier®

The IDP Terrapier® Technique

The technique involves first augering a 30 to 36 inch-diameter hole to depths of 5 to over 25 feet. The augering process provides a direct observation of the subsurface layers, allowing rapid field modifications to the design, if required.

Aggregate is then added to the hole and densified with a 5 to 6 ton circular steel tamper, using multiple drops from heights of up to about 40 feet, depending on design requirements. This ramming action results in a very dense expanded base bulb as well as a significant zone of compacted soil beneath the base bulb. Thin lifts of aggregate are then added and vertically compacted with the tamper until the design bearing elevation is reached.



Christopher Newport University, Newport News, VA



UNC Tower Village, Greensboro, NC

IDP Terrapier® Advantages

- Combines two proven technologies.
- Extremely strong piers, verified with modulus testing.
- Superior settlement control.
- Rapid installation rates with up to 50 piers per day being common.
- Visual observation of soil types through auger cuttings.
- Green technology, assisting in LEED certification.
- Low cost.
- Bearing pressures of up to 10,000 psf, with 6,000 psf being common.

Typical Applications

- Foundations
- Floor Slabs
- Tank Structures
- MSE Walls
- Liquefaction Mitigation



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Engineered Ground Improvement



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