

Helical Piers for Pre-Construction Pool Support

GALVANIZED HELICAL PIER INSTALLATION

Project

Ensuring Long-Term Pool Stability

The project focuses on the pre-construction phase of a new in-ground swimming pool. The primary goal is to establish a foundation that guarantees long-term stability and prevents issues like settling, cracking, or structural failure. The homeowner seeks a solution that provides reliable and predictable support for the pool, ensuring the longevity and integrity of their investment.

Challenge

Durable and Predictable Foundation

Building a pool foundation presents several challenges, particularly in ensuring its long-term performance:

- **Soil Conditions:** The underlying soil may have variable properties, including areas of low density, high moisture content, or expansive clay. These conditions can lead to ground movement and uneven settling over time, potentially damaging the pool structure.
 - **Sustained Load:** The pool, filled with water and concrete, represents a significant and sustained load that the foundation must support without failure.
 - **Environmental Factors:** The foundation is exposed to constant moisture and potential storm-related hydrostatic pressure from the surrounding soil. This can lead to degradation of certain materials over time. Hydrostatic pressure from hurricane storm events can cause pools to heave or "pop" if they don't have a solid foundation. Helical piers installed before the pool is installed can prevent you from having to rip out and replace a pool that has "popped."
 - **Need for Precision:** Accurate load calculations and precise installation are crucial to ensure that the foundation can adequately support the pool without over-designing (which adds unnecessary cost) or under-designing (which risks failure).
- These challenges highlight the need for a foundation solution that is:
- **Resistant to Degradation:** Able to withstand the harsh environment around a pool without losing strength. This is especially important in storm surge-prone areas.
 - **Predictable Performance:** Offers consistent and verifiable load-bearing capacity.
 - **Adaptable:** Can be effectively installed in a variety of soil conditions.



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Solution

Helical Piers – An Engineered System for Superior Support

Helical piers are an ideal solution for pre-construction pool support, offering a range of advantages that directly address the challenges outlined above:

- **Exceptional Durability:** Helical piers are constructed from galvanized steel, providing exceptional resistance to corrosion. Helical piers have long-term durability in challenging environments.
- **Verifiable load-bearing capacity:** The installation torque of a helical pier is directly correlated to its load-bearing capacity. This allows for real-time verification during installation, ensuring each pier meets the required specifications.
- **Rapid and Non-Disruptive Installation:** The installation process is done with speed and minimal impact on the surrounding landscape. No excavation is required, and the piers are simply screwed into the ground, significantly reducing installation time and disruption.
- **Adaptability to Varying Soil Conditions:** Different helix plate configurations can be selected to optimize performance in specific soil types, ensuring a secure foundation regardless of the ground conditions.
- **Engineered for Precision:** Helical piers are engineered products, manufactured to strict standards. This ensures consistent quality and allows for precise load calculations, providing confidence in the foundation's performance.
- **Environmentally Sound:** Helical piers don't have chemicals that can harm the surrounding area.

Helical Piers vs. Timber Piles: A Clear Advantage

While the project focuses on achieving a stable pool foundation, it's important to understand why helical piers are presented as the superior choice, especially when contrasted with the traditional alternative: timber piles.

- **Durability and Longevity:** The galvanized steel of helical piers are significantly more durable than timber piles. There is concern of the vulnerability of timber to rot, decay, and have insect damage. Timber, even when treated, will degrade over time, particularly in the moist environment around a pool. Helical piers offer a significantly longer lifespan.
- **Predictability and Verification:** There is a verifiable capacity of helical piers through torque measurement. Timber pile capacity, on the other hand, relies on estimations and is subject to greater uncertainty due to variations in timber quality and soil conditions.
- **Environmental Impact:** Timber piles are treated with chemicals that are bad for the surrounding area, where helical piers are not.
- **Installation:** Driving timber piles can be more disruptive, requiring heavier equipment and potentially causing more ground vibration.

In conclusion, helical piers are the preferred foundation solution for pre-construction pool support. Their superior durability, verifiable load-bearing capacity, ease of installation, and adaptability, especially when compared to the limitations of timber piles, make them the ideal choice for ensuring long-term pool stability and protecting the homeowner's investment.