

Ductile Iron Piles: Low-Vibration Driven Pile

Good Vibrations - Looking for good (low) vibrations on your project?

Do you have a soft soil site that requires deep foundations, but the presence of nearby structures makes you think twice about driving piles that generate high vibrations?

For good reasons, driven piles are often rejected from projects in urban settings or near adjacent structures because of harmful vibrations generated during driving. Traditional piles use large hammers (drop, air/steam, diesel, etc) that generate high amplitude and low frequency vibrations that travel long distances and can greatly exceed vibration limits particularly in urban settings.

Ductile Iron Piles: A low-vibration driven system

The Ductile Iron Pile (DIP) system, designed and installed by Helical Drilling, is a unique **Driven Pile** system that generates significantly **reduced vibration** levels compared with traditional driven piles. The system is installed using an excavator-mounted, medium-sized *percussion* hammer to advance the pile using high-frequency percussive energy. The high frequency vibration waves during pile installation are significantly lower amplitude compared with traditional driven pile operation. Additionally, the high frequency waves dissipate rapidly with distance from the energy source. The end result is a driven pile system that results in minimal levels of vibration during driving.

Vibration measurements show peak particle velocities well below 2 inches per second at distances of less than one foot from installations with frequency levels typically ranging from 20 Hz to greater than 100 Hz. Measurements of vibration levels during Ductile Iron Pile installation typically range from 0.1 to 0.3 in/sec at distances as close as 2 feet from the installation location. These low vibration levels further diminish rapidly with distance from the energy source and are less than 0.1 in/sec at distances of 10 feet from installation based on field measurements.

For more information on GeoStructures projects where Ductile Iron Piles provided low vibration pile foundation support, click the project links.

- [REI @ Pike and Rose](#)
- [Virginia Tech – Brodie Hall](#)

Interested in this innovative low vibration pile system, contact one of our [regional sales engineers](#) or visit www.geostructures.com for more information.

