

New Construction Micropiles

Micropiles are small diameter (<12") drilled replacement piles developed in the 1950's. Development in Europe was faster than in North America with the first micropile projects in the U.S. being installed in the early 1970's. Development was slow in the U.S. until the early 1990's when a research program investigating the utility of micropiles was initiated by the FHWA, university engineering departments, and several contractors. Since then, the use of micropiles has steadily increased.



Micropiles have several unique characteristics that offer advantages over other deep foundation systems available. There are also limitations that might limit applications.

The advantages of micropiles are:

- The equipment needed for installation is smaller than other foundation systems allowing the use of micropiles in limited access situations.
- The installation method for micropiles creates relatively little disturbance to the surrounding area making them ideal for use in environmentally sensitive areas, or indoors for remedial support.
- Due to the higher cross section area of reinforcing steel relative to other foundation systems, micropiles provide a significant increase in lateral or shear capacity.
- Micropiles are not end bearing and as such are not limited to locations with competent rock to develop their load bearing capacity.
- Micropiles do not have to be directly loaded by the structure, but can be used as a passive reinforcement of the surrounding soil mass to improve the foundation materials.
- As micropiles are a drilled replacement foundation, they can be installed in areas of soil with floating or pendant boulders that would make driven piles impossible to install.

