FOUNDATION CONSTRUCTORS, INC.
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FUNDEX PILE SERIES

The Fundex pile is a true full-section cast-in-place reinforced concrete pile, installed by torque and down pressure, completely free of vibration and with no piledriving noise. It is a true soil displacement pile over its full pile length. Fundex piles are usually designed for a 60 to 140 ton service capacity. The method of installation permits no possibility of discontinuities of the pile shaft because a sealant prevents intrusion of soil or water into the incomplete pile. There are no limitations on the depth of the reinforcing cage or rebar size within the pile. The concrete is not soil mixed slurry, but rather pure structural concrete cast within the mandrel.

Advantages of FUNDEX Piles:

- **Vibration Free**: With growing concerns of impacting adjacent buildings, tenants, and sensitive equipment the Fundex pile completely eliminates vibrations due to our drilling installation method.
- **Noise Reduction:** The only noise generated comes from the engine of the equipment which typically operates at 85 db.
- **Soil Displacement:** Full displacement pile with little to no drill spoil off-haul. Eliminating the need to handle or remove hazardous and/or contaminated soils.
- **Bearing Capacity:** A strong friction bond between the soil and the pile is created due to the cast-in-place nature of the pile surface. The soil displacement installation method also greatly increases pile capacities through end bearing and our sacrificial tip.
- **Quality Control:** Rebar cages are placed in a hollow mandrel prior to pouring concrete, allowing for an inspect-able full length cage. The method prohibits water and soil intrusion, and is unaffected by high water tables, caving sands or running soils during construction. Tolerances are generally similar to pile driving.
- **Versatility:** Pile lengths can be easily adjusted for varying bearing contours, avoiding wasted pile length.
- **Confined Sites:** Large stockpile areas are not necessary due to piles being cast in place.
- **Design Versatility:** For piles that require high tension loads, modified cages utilizing prestressed steel bars can be used inside the Fundex pile.

Heritage Foods Tank Foundation-Santa Ana, CA

FUNDEX Pile Dimensions:

Standard sizes of FUNDEX piles shown as inches (mm)*

FUNDEX Shaft Diameter	Drill Point Diameter
Ø 15 in (380 mm)	Ø 19 in (483 mm)
Ø 18 in (457 mm)	Ø 22 in (558 mm)
Ø 22 in (558 mm)	Ø 26 in (660 mm)

**Standard dimensions only, additional sizes are available if required*

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Installation Methods:

Step 1

Fundex piles are installed with a crawler mounted hydraulic piling rig fitted with a hydraulic drill table with up to an 85 ft (27 m) vertical stroke. The drilling mandrel, which extends through the drill table is equipped with a specially adapted drive head that seats into the Fundex drill tip.

To commence installation, the drill table is raised to its maximum height and the drill mandrel is hydraulically clamped.

The mandrel is then drilled into the ground with a downward crowd force of over 160,000 lbs and torque of up to 300,000 ft-lbs. The soil is displaced laterally as the mandrel is forced into the ground.

Step 2

After ensuring that the drill mandrel is dry and the required tip elevation or resistance is met, the full-length reinforcing cage is placed in position and then sufficient concrete for the complete pile is poured into the mandrel.

Step 3

The drill tube is extracted upward while oscillating the mandrel. The tip, cage, and concrete are left in place, and the drill point forms an enlarged pile base for the pile. Head pressure on the concrete maintains and enlarges the pile diameter as the mandrel disengages the drill tip.

Step 4

When the mandrel clears the ground surface, the cage and concrete are verified, and the pile is complete to be later cutoff to the correct elevation after structural excavation.

By using a manometer installed in the hydraulic circuit, it is possible to assess the ground resistance by direct comparison with the pressure and it is therefore possible to measure the load bearing capacity of the foundation layer. (There is an accurate correlation between the pressures down on the manometer and the cone resistance that has been measured previously.)

If Fundex piles are to be installed in very sensitive soils, it is possible to use a prefabricated core or a thin steel casing in the mandrel after reaching the tip elevation to avoid localized expansion of the pile shaft. The inner casing is then filled with concrete and the drill tube extracted.

When very dense or hard layers have to be penetrated, the mandrel may be drilled by using fluidation.

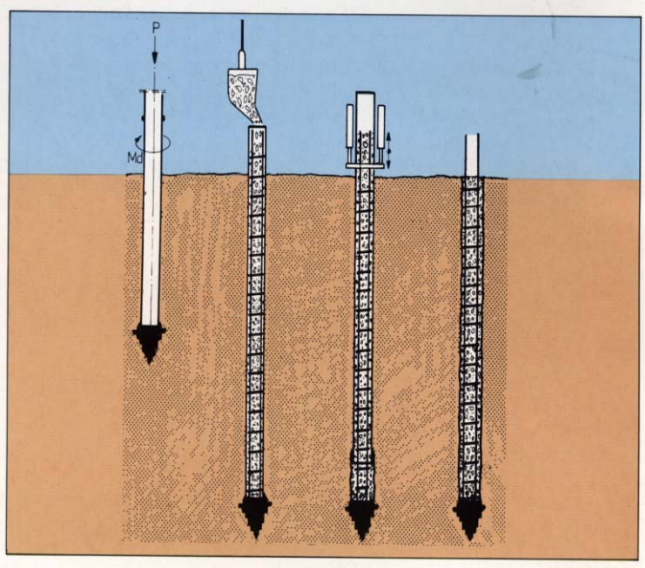
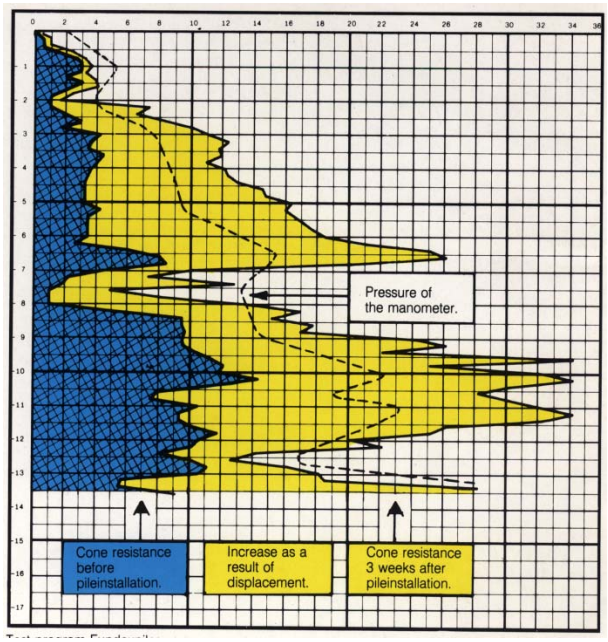


Diagram of Step-by Step Installation



CPT Test Program for Fundex Piles

Yselcontrole Harculo Power Station Engineers:
Delft Soil Mechanics BV

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