

# Screwsol

## Rotary Displacement Piling



### What is it?

A Rotary Displacement Piling System provides improved soil strength and load transfer to the surrounding ground. As the boring tool penetrates, granular soils are displaced resulting in a localised increased relative density and strength around the pile depending upon soil conditions. Minimal soil comes to the surface.

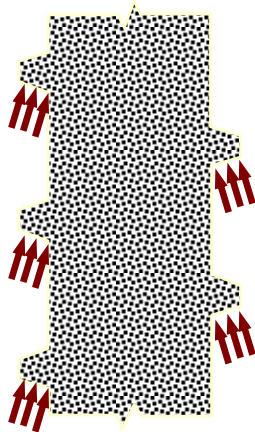
### Section Through Pile



### How does it work?

Improved load transfer to the surrounding ground is achieved through an enhanced shaft capacity. Thick concrete threads are created in the construction process that facilitate the load transfer from pile core to soil.

This is achieved through the creation of an increased effective diameter/surface area, and the end bearing effects of the thick threads formed.

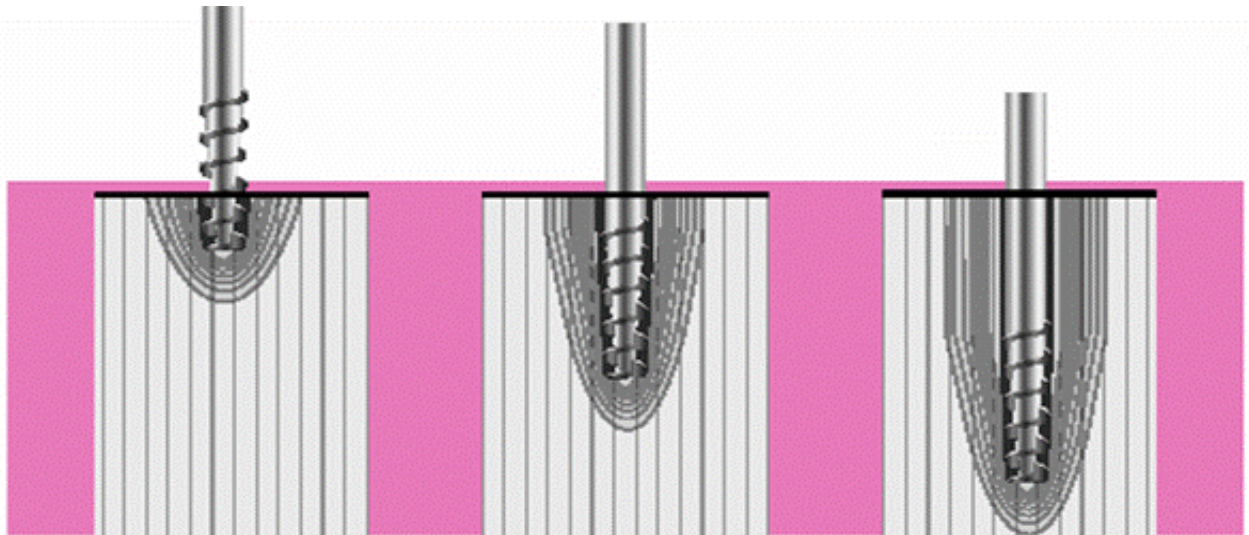


### The benefits

- Reduction in overall foundation costs by reducing pile lengths and diameters.
- Minimal spoil at ground level, which provides an ideal solution for brown field sites where contamination may be an issue.
- Reduced earthwork costs as soil disposal costs are minimised.

## Soils Suitability

| Soil          | Strength          | Improvement v. bored piles | Comments  |
|---------------|-------------------|----------------------------|---|
| SILTY SANDS   | SPT 'N' = 4 – 10  | ✓                          | • Soil improvement minimal but cost effective pile provided                 |
|               | SPT 'N' = 10 – 30 | ✓ ✓                        | • Ideal   |
|               | SPT 'N' = 30 – 50 | ✓                          | • Maximum depth limited by possible refusal criteria                        |
| SANDY GRAVELS | SPT 'N' = 4 – 10  | ✓                          | • Soil improvement minimal but cost effective pile provided                 |
|               | SPT 'N' = 10 – 30 | ✓ ✓                        | • Ideal if no cobble obstructions   |
|               | SPT 'N' = 30 – 50 | ✓ ✓                        | • Maximum depth limited by possible refusal criteria or cobble obstructions |
| CLAYS         | Cu = 20 – 40      | ✓ ✓                        | • No soil improvement but cost effective pile provided                      |
|               | Cu = 40 – 70      | ✓                          | • No soil improvement but cost effective pile provided                      |
|               | Cu = 75 – 100     | ✓                          | • Effective if soil costs are prohibitive                                   |
|               | Cu = 100 – 150    | X                          | • Screwsol possible but no design benefits                                  |
|               | Cu = 150+         | X                          | • Use conventional bored pile   |
| CHALK         | SPT 'N' = 5 - 15  | ✓ ✓                        | • Ideal   |
|               | SPT 'N' = 15 - 25 | ✓ ✓                        | • Okay if no flint obstructions   |
|               | SPT 'N' = 25+     | ✓ ✓                        | • Maximum depth limited by possible refusal criteria or flint obstructions  |



Soils Displaced As Auger Penetrates Ground



Minimal Spoil At Surface



Extracted Displacement Pile