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MPS Civil Products is part of MacLean-Fogg, a diversified international manufacturing enterprise. As a result of the acquisition and merger of Joslyn, Dixie and Foresight, the three most prominent soil anchor manufacturers, MPS Civil Products is now one of the leading suppliers of steel deep foundation systems for use in residential, commercial and marine applications. Our comprehensive product line for residential and commercial applications includes engineered solutions for tension, compression and structural stabilization in many different soils. When Quality and Service is your focus, Solutions are the result.



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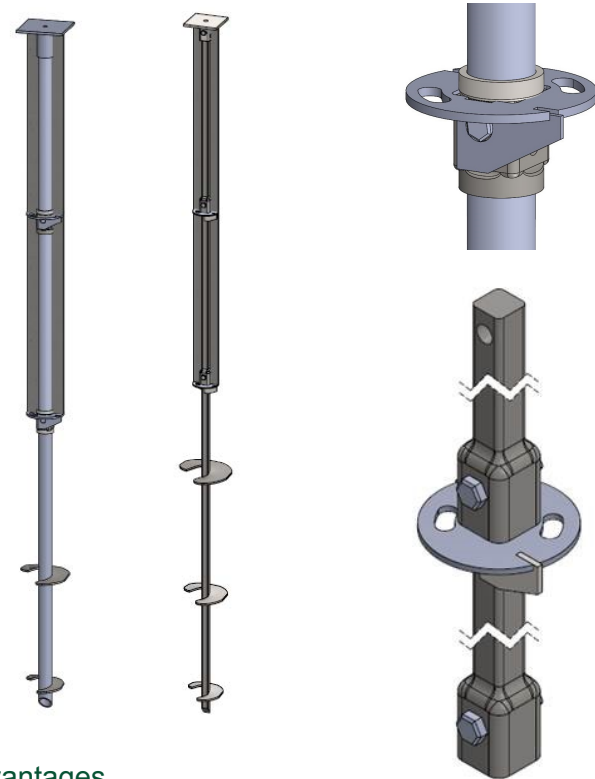


**MacLean Vortex Pile**  
Composite Helical Pipe Foundation



**MPS Civil Products**

# The MacLean Vortex Pile



The MacLean Vortex Pile (MVP) is an easily installed grouted helical pipe pile. The MVP is applicable to a wide variety of soil conditions and provides the rapid and simple installation expected of a helical pile, but delivers the higher buckling resistance and lateral capacity associated with concrete piling systems. More robust than ungrouted helical piles and less costly than traditional concrete micropiles, the MVP is a perfect fit for new construction or foundation repair where large unbraced lengths are expected, where a high water table complicates deep excavations, or where high winds, flood waters, or other construction considerations will impart a high lateral load to the foundation.



## Advantages

- Grouted pipe piles provide structural steel reinforcement for increased bending strength and higher lateral capacity.
- Helical flights plus skin friction along the grouted column allows for up to 98% increase in capacity over similarly sized helical piles.
- Concrete column construction with no spoils to truck off site
- Minimal excavation required – Ideal for high water table sites
- Installed with same tooling as traditional helical piles
- Micropile magnitude loads with very low mobilization costs

The unique design of the MVP includes a group of cutting teeth on the leading surface and grout-agitating fins on the trailing face. This ensures the formation of a high integrity grout column free of voids and soil inclusions.

Pile Type	Ultimate Capacity in Kips by Soil Type*					
	Loose Sand		Loose Silt		Soft Clay	
	Axial	Lateral	Axial	Lateral	Axial	Lateral
1-3/4" Square Bar Pile	45	0	47	0.5	40	0.5
3-1/2" Pipe Pile	50	0.8	52	1.6	45	1.4
<b>2-7/8" MVP</b>	<b>52</b>	<b>1.5</b>	<b>55</b>	<b>2.7</b>	<b>62</b>	<b>2.3</b>
<b>3-1/2" MVP</b>	<b>55</b>	<b>3.5</b>	<b>58</b>	<b>5.6</b>	<b>70</b>	<b>5.2</b>

\* Above capacities are estimated and based on 28-foot piles installed in soils with SPT "N-values" of 5 bpf for 20 feet, followed by a 15 bpf underlying layer.



## MVP Installation



### STEP 1: Insert the Helical Pile Lead

Excavate a small hole and insert a plastic or Sonotube liner. The conventional helical pile lead section is installed.



### STEP 2: Couple the MVP

The MVP Extension is coupled to the lead section and installation continues. Note the displacement ring and square engagement.



### STEP 3: Create the Grout Column

Grout is added to fill the reservoir and the pile is advanced through to create a uniform column.

Use unsanded, Portland cement-based, expanding grout containing silica fume (microsilica) and fly ash.



### STEP 4: Complete Installation

Add additional extensions as necessary and advance the pile to the required depth.