

MAGNUM® MBS Helical Post Bases

Introduction

8" to 16" Dia. x 3 to 30 ft Long Steel Casing
for Support of Soundwalls, Light Posts, and Towers



Description

The Magnum MBS Helical Post Base foundation consists of a variable length, large diameter steel casing encircling a smaller diameter tube shaft with two helical bearing plates. The central shaft extends beyond the bottom of the casing a distance of several feet as a guide to maintain plumbness during installation. The casing is welded to a top plate with slotted bolt-hole pattern. The entire foundation is screwed into the ground to a depth at which the top plate is positioned slightly below the ground surface. The top plate accommodates attachment of various structures.

Helical foundations can significantly reduce construction cost and schedule time, because they can be installed in a fraction of the time required for drilled shafts. The use of helical foundations also improves traffic safety, because they eliminate the need for concrete curing and redundant traffic control. Helical foundations can be installed in areas with limited access, install easily through ground water, and do not produce drill spoil. These features make them particularly attractive alternatives for congested metropolitan areas and environmentally contaminated sites. Helical post foundations are installed using a hydraulic torque motor mounted to an excavator or derrick truck. Installation can generally be completed in minutes. The helices displace the soil with minimal disturbance much like a screw. The casing fills with soil during installation so as to resist crushing under external earth pressures. Several sizes are offered at 1 foot increments. Custom sizes are available for special cases.

The MBS Helical Post Base is capable of penetrating very stiff clays, dense sands and gravels, and even medium hard, highly weathered, sedimentary bedrock formations. MBS foundations are not applicable in soils characterized by a SPT blow count of more than 50 for 6 inches, hard bedrock, or soils with cobble and boulders. The size of helical post bases are typically governed by the overturning moment. Below is a table with preliminary sizing. Magnum's technical support professionals can assist with sizing recommendations and for a small fee can provide a complete engineering report for specific job sites. Bearing and pullout capacity can be checked using helical sizing charts or by traditional geotechnical calculations.

COHESIVE SOILS				NON-COHESIVE SOILS					
Soft	Medium	Stiff	Very Stiff	Loose	Medium	Dense	Very Dense		
STANDARD PENETRATION TEST BLOW COUNT (bpf)									
2 - 4	4 - 8	8 - 15	>15	4 - 10	10 - 30	30 - 50	>50		
COHESIVE (psf)				ANGLE OF INTERNAL FRICTION (deg)					
400	800	1500	3000	29	33	39	45		
PRELIMINARY MBS SIZING									
OVERTURNING MOMENT (k-ip-ft)	5	MBSS8-7	MBSS8-5	MBSS8-3	MBSS8-3	MBSS8-7	MBSS8-7	MBSS8-5	MBSS8-4
	10	MBSS12-10	MBSS12-6	MBSS8-5	MBSS8-4	MBSR8-10	MBSR8-9	MBSR8-7	MBSR8-6
	15	MBSS12-13	MBSS12-8	MBSR8-7	MBSR8-4	MBSR12-11	MBSR12-9	MBSS12-8	MBSR8-7
	20	MBSR12-16	MBSR12-10	MBSS12-7	MBSR8-5	MBSR12-12	MBSR12-10	MBSR12-9	MBSR12-7
	25	MBSR12-19	MBSR12-12	MBSR12-8	MBSR12-5	MBSR12-13	MBSR12-11	MBSR12-9	MBSR12-8
	30	MBSR16-19	MBSR12-13	MBSR12-9	MBSR12-6	MBSR16-13	MBSR16-11	MBSR12-10	MBSR12-8
	35	MBSR16-21	MBSR16-13	MBSR12-10	MBSR12-6	MBSR16-14	MBSR16-12	MBSR16-10	MBSR12-9
	40	N/A	MBSR16-14	MBSR12-11	MBSR12-7	N/A	MBSR16-13	MBSR16-10	MBSR16-9
	45		MBSR16-16	MBSR16-10	MBSR12-7		N/A	MBSR16-11	MBSR16-9
	50		N/A	MBSR16-11	MBSR16-7			N/A	MBSR16-9
	55			MBSR16-12	MBSR16-7				N/A
	60			N/A	MBSR16-8				
	65				MBSR16-8				
	70				MBSR16-9				
	75				N/A				

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Note: Application abbreviation not shown in these part numbers. Application specification only affects base plate sizing

All Magnum Products Made in U.S.A.

U.S. Patents 6,722,821; Other Patents Pending.