



Manta Ray® anchor load ultimate tension capacity with 5/8” (16,000 lb-force), 3/4” (23,000 lb-force) and 1” (36,000 lb-force) power hub anchor rods.

Manta Ray anchor ultimate load capacity with power hub anchor rods (lbs-force)					
Soil Description	Standard Penetrometer Blow Count (N)	MR-1 (3/4” or 1” rod)	MR-2 (3/4” or 1” rod)	MR-3 (5/8” rod)	MR-SR (3/4” or 1” rod)
Very dense/cemented sands; coarse gravel and cobbles	60-100+	36,000 (1)	36,000 (1)	16,000 (1)	NA
Dense fine compacted sands, very hard silts or clays	45-60	36,000 (1)	28,000 (2)	16,000 (1)	36,000 (1)
Dense clays, sands and gravels, hard silts and clays	35-40	36,000 (1)	22,000 (2)	16,000 (1)	36,000 (1)
Medium dense sandy gravel, stiff to hard silts and clays	24-40	20,000 (2)	18,000 (2)	14,000 (2)	34,000 (2)
Medium dense coarse sandy gravel, stiff to very stiff silts and clays	14-25	20,000 (2)	12,000 (2)	9,000 (2)	24,000 (2)
Loose to medium dense fine to coarse sand: firm to stiff clays and silts	7-14	15,000 (2)	10,000 (2)	8,000 (2)	18,000 (2)
Loose fine sand, alluvium, soft clays, fine saturated silty sand	4-8	12,000 (2)	8,000 (2)	5,000 (2)	14,000 (2)
Peat, organic silts: inundates silts fly ash	0-5	8,000 (2)	5,000 (2)	2,000 (2)	12,000 (2)

Notes: (1) Manta Ray anchor holding capacity limited by rod tension strength rating
(2) Manta Ray anchor holding capacity limited by soil capacity

Manta Ray® anchor load ultimate tension capacity with 5/8” (71.2 kn), ¾” (102.3 kn) and 1” (160.1 kn) power hub anchor rods.

Manta Ray anchor ultimate load capacity with power hub anchor rods (kn)					
Soil Description	Standard Penetrometer Blow Count (N)	MR-1 kn	MR-2 kn	MR-3 kn	MR-SR kn
Very dense/cemented sands; coarse gravel and cobbles	60-100+	160.1 (1)	160.1 (1)	71.2 (1)	NA
Dense fine compacted sands, very hard silts or clays	45-60	160.1 (1)	124.6 (2)	71.2 (1)	160.1 (1)
Dense clays, sands and gravels, hard silts and clays	35-40	160.1 (1)	97.9 (2)	71.2 (1)	160.1 (1)
Medium dense sandy gravel, stiff to hard silts and clays	24-40	89 (2)	80.1 (2)	62.3 (2)	151.2 (2)
Medium dense coarse sandy gravel, stiff to very stiff silts and clays	14-25	89 (2)	53.4 (2)	40.0 (2)	106.8 (2)
Loose to medium dense fine to coarse sand: firm to stiff clays and silts	7-14	66.7 (2)	44.5 (2)	35.6 (2)	80.1 (2)
Loose fine sand, alluvium, soft clays, fine saturated silty sand	4-8	53.4 (2)	35.6 (2)	22.2 (2)	62.3 (2)
Peat, organic silts: inundates silts fly ash	0-5	35.6 (2)	22.2 (2)	8.9 (2)	53.4 (2)

Notes: (1) Manta Ray anchor holding capacity limited by rod tension strength rating
 (2) Manta Ray anchor holding capacity limited by soil capacity