MANTA RAY
EARTH ANCHOR SYSTEMS

Manta Ray Anchor Ultimate Holding Capacities in Listed Soils

Common Soil Type Description	Typical Blow Count "N" Per ASTM-D1586	MR-68	MR-88	MR-4	MR-3	MR-2	MR-1	MR-SR	MK-B
Peat, Organic Silts; Inundates Silts, Fly Ash	0 - 5	N.A.	0.9-4kN (4,6)	1.3-7kN (4,6)	3.5-13kN (4,6)	9-22kN (4,6)	13-37kN (4,6)	18-53kN (4,6)	27-71kN (4,6)
Loose fine Sand; Alluvium; Soft-Firm Clays; Varied Clays; Fills	4 - 8	1.8-3.5kN (4,6)	4-7kN (4,6)	7-11kN (4,6)	13-22kN (4,6)	22-36kN (4,6)	36-53kN (4,6)	40-62kN (4,6)	58-89kN (4,6)
Loose to Medium Dense Fine to Coarse Sand; Firm to Stiff Clays and Silts	7 - 14	3.5 -6kN (4)	7-11kN (4)	11-18kN (4)	22-36kN (4)	31-44kN (4)	44-67kN (4)	62-80kN (4)	89-107kN (4)
Medium Dense Coarse Sand and Sandy Gravel; Stiff to very Stiff Silts and Clays	14 - 25	5-7kN (4)	9-13kN (4)	16-20kN (4)	31-40kN (4)	40-53kN (4)	67-89kN (4)	80-107kN (4)	107-142kN (2,4)
Medium Dense Sandy Gravel; Very Stiff to Hard Silts and Clays	24 - 40	7-9kN (4)	13-18kN (4)	20-25kN (4)	40-62kN (4)	53-80kN (4)	80-89kN (2,4)	107-151kN (2,4)	143-178kN (2,4)
Dense Clays, Sands and Gravel; Hard Slits and Clays	35 - 50	9-11kN (4)	18-27kN (4)	27-40kN (4)	53-80kN (2,4)	67-98kN (2,4)	107-160kN (2,4)	142-178kN (2,3,4)	178kN (1,3)
Dense Fine Sand; Very hard Silts and Clays	45 - 60	11kN (2,3,4)	27-45kN (2,3,4)	40-71kN (2,3,4)	76-89kN (2,3,4)	93-125kN (2,4)	160-178kN (1,3,4)	178kN (1,3)	178kN (1,3,5)
Very Dense and/or Cemented Sands; Coarse Gravel and Cobbles	60 - 80+	11 kN (1,3)	45kN (1,3)	71kN (1,3)	89kN (1,3)	125-178kN (1,3,4)	178kN (1,3)	178kN (1,3,5)	178kN (1,3,5)

KEY

1 - Drilled hole required to install.
2 - Installation may be difficult. Pilot hole may be required.
3 - Holding capacity limited by working load of anchors
4 - Holding capacity limited by soil failure.
5 - Not recommended in these soils.
6 - Wide variation in soil properties reduces prediction accuracy.
Pre-constructed field test recommended.
* Use this chart for estimation only.
* True capacity must be tested with anchor locker.

SWR

www.steelwirerope.com

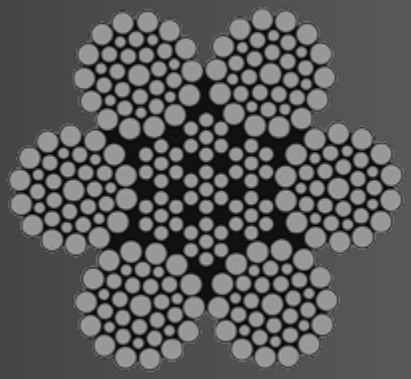
6X36 STAINLESS STEEL WS I.W.R.C

6x36 is a flexible general engineering wire rope which has an equal lay construction (warrington seale) and achieves a superior breaking load than the 6x19 construction range. This construction gives flexibilty with a good fatigue life.

Stainless

Pulley Suitable

Flexible



Breaking Load Table

Nominal Diameter	Approximate Mass	Minimum breaking loads - 1570 Mpa	
[mm]	[kg/m]	[kN]	[kg]
8	0.280	35.80	3,651
9	0.350	45.30	4,620
10	0.430	55.90	5,701
11	0.539	67.60	6,895
12	0.619	80.50	8,211
14	0.843	109.50	11,169
16	1.100	143.10	14,596
18	1.390	181.00	18,462
20	1.720	224.00	22,848
22	2.160	271.00	27,642
24	2.480	322.00	32,844
26	2.760	378.00	38,515
28	3.370	438.00	44,676
30	3.870	503.00	51,306
32	4.410	572.00	58,344

sales@steelwirerope.com

+44 (0)1442 353005