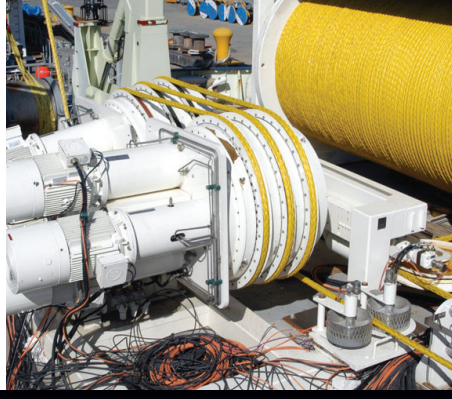


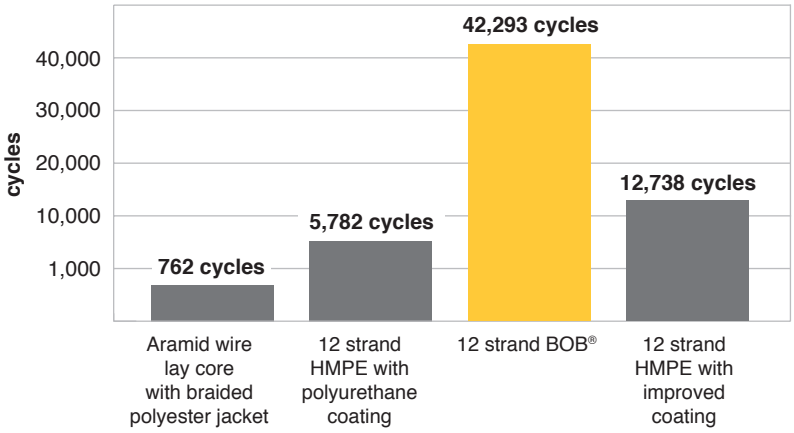
BOB® Rope

for continuous bend-over-sheave applications

Heavy marine cyclic bend-over-sheave (CBOS) applications call for rope constructions with high fatigue resistance performance and long-term creep resistance. Rope failures can cause considerable vessel downtime cost.

Cortland's exclusive Braid Optimized for Bending (BOB®) UHMWPE fiber rope construction was developed specifically for use where ropes cycle continuously back-and-forth across sheave applications. BOB offers superior cyclic fatigue resistance performance, especially in dynamic bend-over-sheave applications, as well as excellent long-term creep resistance.

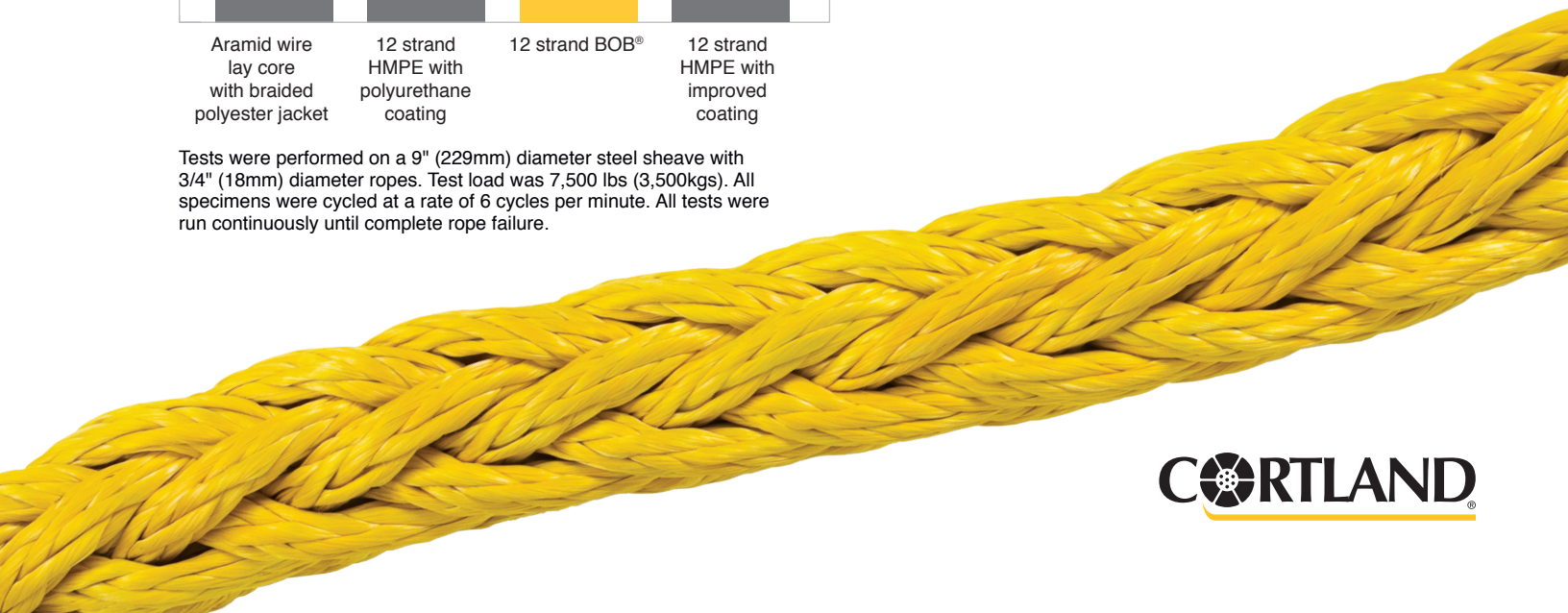
BOB® Bend Over Sheave Test Data



Tests were performed on a 9" (229mm) diameter steel sheave with 3/4" (18mm) diameter ropes. Test load was 7,500 lbs (3,500kgs). All specimens were cycled at a rate of 6 cycles per minute. All tests were run continuously until complete rope failure.

Features
- High strength
- Low stretch
- Ultra low creep
- Soft hand
- Torque free
- Easy splicing

Applications
- Replacement for wire rope in deep water lifting applications
- Use on drum and traction winches
- Active heave compensation systems
- Heavy lift slings
- High fatigue applications
- Seismic tow cables
- Tether applications
- Theatrical rigging



CORTLAND®

BOB® Rope

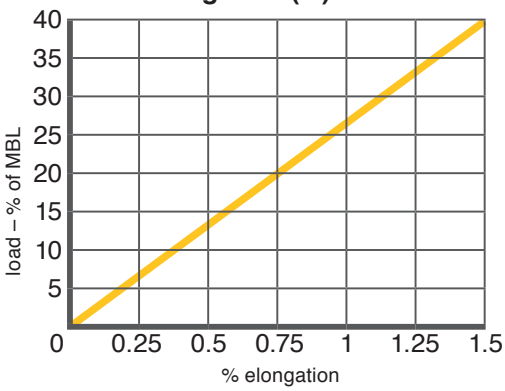
The patented blend of high performance fibers, available in either 12-strand or 12x12 strand designs, features high strength, low stretch and ultra low creep to maximize durability in bending situations. These features translate into less downtime and cost efficiencies in situations such as seismic tow arrays, where rope failures cause array recovery downtime and possible data loss.

BOB® ropes can be supplied with multiple coating finishes to suit specific applications. For more information email cortland@cortlandcompany.com.

Specific gravity	**1.18***
Melting point	**284°F (140°C)**
Critical temp.	**150°F (65°C)**
Coefficient of friction	**0.12–0.15***
Elongation at break	**3%–4%**
Fiber water absorption	**<0.1%**
UV resistance	**moderate**
Wet abrasion	**superior**
Dry abrasion	**superior**

* value based on data supplied by the fiber manufacturer for new, dry fiber

BOB® Elongation (%)



	Nominal Diameter		Size (circ in.)	Approximate Weight		Minimum Tensile Strength Spliced Rope		Minimum Tensile Strength ISO Unspliced Rope	
	inch	mm		lbs/ 100ft	kg/ 100m	lbs	MT (tonnes)	lbs	MT (tonnes)
12-Strand	**0.1**	2.5	**0.3**	**0.25**	0.38	**1,260**	0.6	**1,400**	0.6
	1/8	3	**3/8**	**0.41**	0.61	**1,900**	0.9	**2,100**	1.0
	3/16	5	**9/16**	**1.4**	2.09	**5,400**	2.5	**6,000**	2.7
	1/4	6	**3/4**	**2.15**	3.21	**7,700**	3.5	**8,600**	3.9
	5/16	8	**15/16**	**3**	4.48	**13,900**	6.3	**15,400**	7.0
	3/8	9	**1-1/8**	**4.6**	6.86	**17,300**	7.8	**19,200**	8.7
	7/16	11	**1-1/4**	**6.45**	9.62	**23,900**	10.8	**26,600**	12.1
	1/2	12	**1-1/2**	**6.67**	9.95	**28,100**	12.7	**31,200**	14.2
	9/16	14	**1-3/4**	**8.55**	12.76	**40,100**	18.2	**44,600**	20.2
	5/8	16	**2**	**13.5**	20.1	**51,400**	23.3	**57,100**	25.9
	3/4	18	**2-1/4**	**17.8**	26.5	**68,500**	31.1	**76,100**	34.5
	7/8	22	**2-3/4**	**26.1**	38.8	**92,600**	42	**102,900**	46.7
	1	24	**3**	**32**	47.6	**110,000**	49.9	**122,200**	55.4
	1-1/8	28	**3-1/2**	**43.2**	64.3	**147,000**	66.7	**163,300**	74.1
12x12 Strand	**1-1/4**	30	**3-3/4**	**45.2**	67.3	**165,000**	75	**183,300**	83
	1-5/16	32	**4**	**55.2**	82.1	**196,000**	89	**217,800**	99
	1-1/2	36	**4-1/2**	**62.9**	93.6	**221,000**	100	**245,600**	111
	1-5/8	40	**5**	**85.1**	126.6	**291,000**	132	**323,300**	147
	1-3/4	44	**5-1/2**	**102.7**	152.8	**314,000**	142	**348,900**	158
	2	48	**6**	**124.9**	185.9	**355,000**	161	**394,400**	179
	2-1/8	52	**6-1/2**	**146.6**	218.2	**428,000**	194	**475,600**	216
	2-1/4	56	**7**	**168.4**	250.6	**481,000**	218	**534,400**	242
	2-1/2	60	**7-1/2**	**198.3**	295.1	**530,000**	240	**588,900**	267
	2-5/8	64	**8**	**215.5**	320.7	**596,000**	270	**662,200**	300
	2-3/4	68	**8-1/2**	**245.7**	365.7	**660,000**	299	**733,300**	333
	3	72	**9**	**293.2**	436.3	**780,000**	354	**866,700**	393
	3-1/4	80	**10**	**361.6**	538.1	**940,000**	426	**1,044,000**	474
	3-5/8	88	**11**	**465.7**	693.1	**1,250,000**	567	**1,389,000**	630
	4	96	**12**	**558.6**	831.3	**1,520,000**	690	**1,689,000**	766
	4-1/8	100	**12-1/2**	**620**	923	**1,622,000**	736	**1,802,000**	818
	4-1/4	104	**13**	**697**	1037	**1,697,000**	770	**1,886,000**	856
	4-1/2	108	**13-1/2**	**719**	1070	**1,827,000**	829	**2,030,000**	921
	4-5/8	112	**14**	**740**	1101	**1,880,000**	853	**2,089,000**	948
	4-3/4	116	**14-1/2**	**796**	1185	**1,927,000**	874	**2,141,000**	971
	5	120	**15**	**822**	1223	**2,069,500**	939	**2,299,000**	1043
	5-1/8	124	**15-1/2**	**891**	1326	**2,212,000**	1004	**2,458,000**	1115
	5-1/4	128	**16**	**953**	1418	**2,355,000**	1069	**2,617,000**	1187
	5-1/2	132	**16-1/2**	**1015**	1511	**2,497,500**	1133	**2,775,000**	1259
	5-5/8	136	**17**	**1102**	1640	**2,640,000**	1198	**2,933,000**	1331
	5-3/4	140	**17-1/2**	**1181**	1758	**2,782,500**	1262	**3,092,000**	1403
	6	144	**18**	**1264**	1881	**2,925,000**	1327	**3,250,000**	1475
	6-1/8	148	**18-1/2**	**1335**	1987	**3,068,000**	1392	**3,409,000**	1547
	6-1/4	152	**19**	**1407**	2094	**3,210,500**	1457	**3,567,000**	1618
	6-1/2	156	**19-1/2**	**1495**	2225	**3,353,000**	1521	**3,726,000**	1691
	6-5/8	160	**20**	**1571**	2338	**3,496,000**	1586	**3,884,000**	1762
	6-3/4	164	**20-1/2**	**1663**	2475	**3,638,500**	1651	**4,043,000**	1834
	7	168	**21**	**1741**	2591	**3,781,000**	1716	**4,201,000**	1906
	7-1/8	172	**21-1/2**	**1809**	2692	**3,963,500**	1798	**4,404,000**	1998
	7-1/4	176	**22**	**1887**	2808	**4,066,000**	1845	**4,518,000**	2050
	7-1/2	180	**22-1/2**	**1969**	2930	**4,209,000**	1910	**4,677,000**	2122
	7-5/8	184	**23**	**2070**	3081	**4,351,500**	1974	**4,835,000**	2194
	7-3/4	188	**23-1/2**	**2154**	3206	**4,494,000**	2039	**4,993,000**	2265
	8	192	**24**	**2241**	3335	**4,637,000**	2104	**5,152,000**	2338
	8-1/8	196	**24-1/2**	**2348**	3494	**4,779,000**	2168	**5,310,000**	2409
	8-1/4	200	**25**	**2438**	3628	**4,922,000**	2233	**5,469,000**	2481

Size: Diameter and circumference are nominal. A new unused rope in relaxed state will measure larger; loading and use compacts ropes, sets splices and lessens rope size. This is especially prevalent in sizes above 4" diameter. Published nominal sizes from 4-1/8" and larger represent stabilized or preloaded size. **Weights:** Published weights of sizes 1-5/8"– 4" diameter are calculated at linear density under stated preload (200d²) plus 4%. For this chart, sizes 4-1/8"–8-1/4" diameter represent un-cycled, (non-stabilized) weights. **Tensile Strengths:** Tensile strength determined in accordance with Cordage Institute 1500 Test Methods for Fiber Ropes and ISO 2307.