

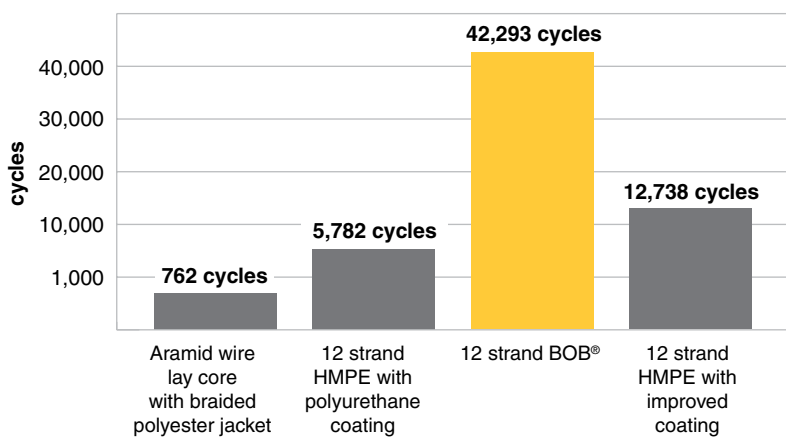


Beat Bending Fatigue with BOB® Rope Construction

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®) HMPE 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



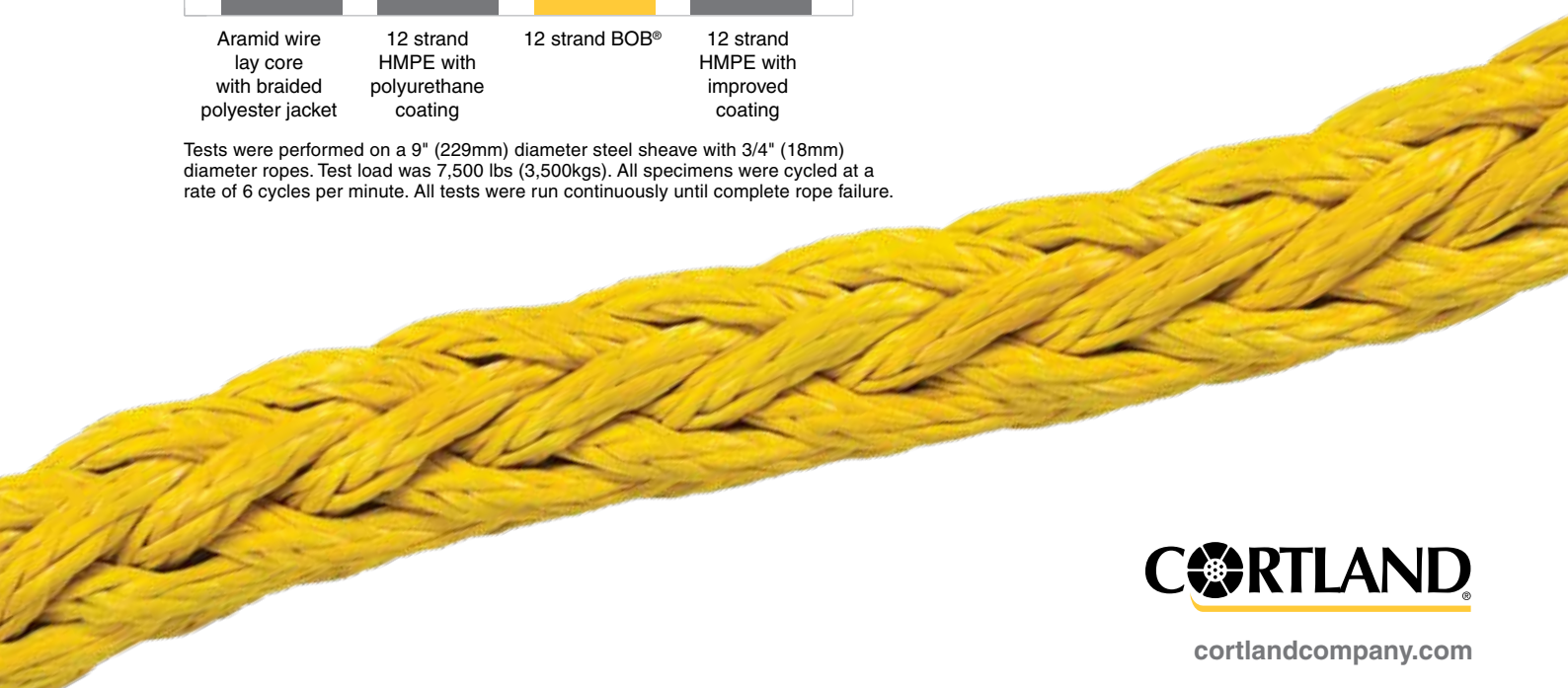
Tests were performed on a 9" (229mm) diameter steel sheave with 3/4" (18mm) diameter ropes. Test load was 7,500 lbs (3,500kgs). All specimens were cycled at a rate of 6 cycles per minute. All tests were run continuously until complete rope failure.

Features

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

Applications

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



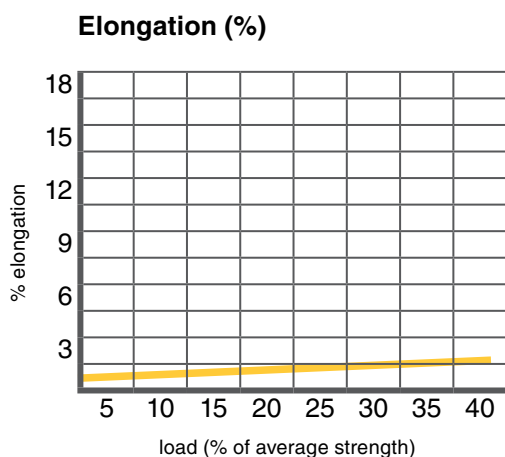
BOB® Rope Construction

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-.015*
Elongation at break	4%-5%
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



	Nominal Diameter		Size (circ in.)	Approximate Weight		Minimum Tensile Strength	
	Inch	MM		Lbs/100ft	Kg/100m	Pounds	kN
12 Strand	5/8	16	2	13.5	20.1	51,400	228.6
	3/4	18	2-1/4	17.8	26.5	68,500	304.7
	7/8	22	2-3/4	26.1	38.8	92,600	411.9
	1	24	3	32.0	47.6	110,000	489.3
	1-1/8	28	3-1/2	43.2	64.3	147,000	653.9
	1-1/4	30	3-3/4	45.2	67.3	165,000	733.9
12x12 Strand	1-5/16	32	4	55.2	82.1	196,000	871.8
	1-1/2	36	4-1/2	62.9	93.6	221,000	983.0
	1-5/8	40	5	85.1	126.6	291,000	1,294.4
	1-3/4	44	5-1/2	102.7	152.8	314,000	1,396.7
	2	48	6	124.9	185.9	355,000	1,579.0
	2-1/8	52	6-1/2	146.6	218.2	428,000	1,903.8
	2-1/4	56	7	168.4	250.6	481,000	2,139.5
	2-1/2	60	7-1/2	198.3	295.1	530,000	2,357.4
	2-5/8	64	8	215.5	320.7	596,000	2,651.0
	2-3/4	68	8-1/2	245.7	365.7	660,000	2,935.7
	3	72	9	293.2	436.3	780,000	3,469.4
	3-1/4	80	10	361.6	538.1	940,000	4,181.1
	3-5/8	88	11	465.7	693.1	1,250,000	5,560.0
	4	96	12	558.6	831.3	1,520,000	6,761.0
	4-1/8	100	12-1/2	620	923	1,622,000	7,215
	4-1/4	104	13	697	1037	1,697,000	7,548
	4-1/2	108	13-1/2	719	1070	1,827,000	8,127
	4-5/8	112	14	740	1101	1,880,000	8,362
	4-3/4	116	14-1/2	796	1185	1,927,000	8,571
	5	120	15	822	1223	2,069,500	9,205
5-1/8	124	15-1/2	891	1326	2,212,000	9,839	
5-1/4	128	16	953	1418	2,355,000	10,475	
5-1/2	132	16-1/2	1015	1511	2,497,500	11,109	
5-5/8	136	17	1102	1640	2,640,000	11,743	
5-3/4	140	17-1/2	1181	1758	2,782,500	12,377	
6	144	18	1264	1881	2,925,000	13,010	
6-1/8	148	18-1/2	1335	1987	3,068,000	13,646	
6-1/4	152	19	1407	2094	3,210,500	14,280	
6-1/2	156	19-1/2	1495	2225	3,353,000	14,914	
6-5/8	160	20	1571	2338	3,496,000	15,550	
6-3/4	164	20-1/2	1663	2475	3,638,500	16,184	
7	168	21	1741	2591	3,781,000	16,818	
7-1/8	172	21-1/2	1809	2692	3,963,500	17,630	
7-1/4	176	22	1887	2808	4,066,000	18,086	
7-1/2	180	22-1/2	1969	2930	4,209,000	18,722	
7-5/8	184	23	2070	3081	4,351,500	19,355	
7-3/4	188	23-1/2	2154	3206	4,494,000	19,989	
8	192	24	2241	3335	4,637,000	20,625	
8-1/8	196	24-1/2	2348	3494	4,779,000	21,257	
8-1/4	200	25	2438	3628	4,922,000	21,893	

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.