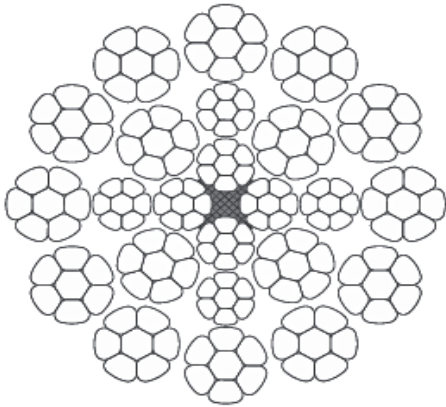


# Harbour and Ship Crane Rope Specifications

**KEY: RR = rotation resistance; C = compacted; PIR = Plastic Impregnation**

## Hoist Ropes

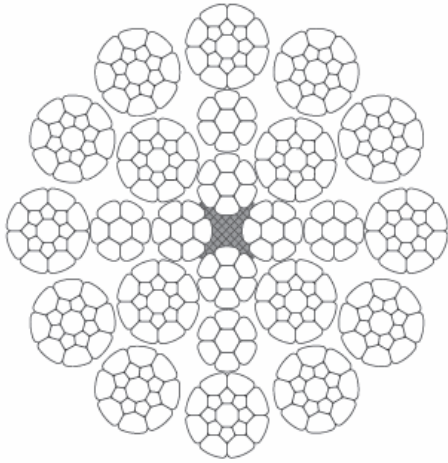
### 24x7 RR & C



Diameter		Section	Mass	Minimum breaking load
mm	inch	mm <sup>2</sup>	kg/m	kN
				1960 MPa
8	5/16	34.4	0.31	56
9	-	43.6	0.39	71
10	-	53.8	0.48	88
11	7/16	65.1	0.58	107.4
12	-	77.5	0.69	127
12.5	-	84.1	0.75	138
13	1/2	91.0	0.81	147
14	9/16	106.0	0.94	175
15	-	121.1	1.07	197
16	5/8	137.8	1.22	224
18	-	174.4	1.54	283
19	3/4	194.3	1.72	315
20	-	215.3	1.91	350
21	-	237.3	2.10	385
22	7/8	260.5	2.31	423
			<b>f - Fill Factor</b>	<b>k - Spinning Loss Factor</b>
			0.685	0.832

**⚠ Never use with swivel**

## 24x17 RR & C



Diameter		Section	Mass	Minimum breaking load
mm	inch	mm <sup>2</sup>	kg/m	kN
		1960 MPa		
24	-	314.1	2.87	507
25.4	1	351.9	3.21	568
28	1-1/8	427.6	3.90	690
30	-	490.8	4.48	792
32	1-1/4	558.5	5.09	901
34	1-3/8	630.5	5.75	1017
36	-	697.5	6.23	1105
38	1-1/2	777.1	6.94	1231
40	-	850.9	7.63	1364
42	-	949.3	8.48	1503
44	-	1041.9	9.30	1650

f - Fill Factor

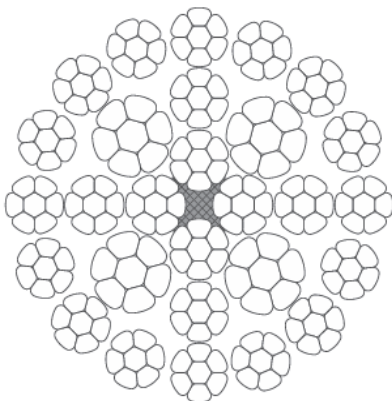
k - Spinning Loss Factor

0.689

0.817

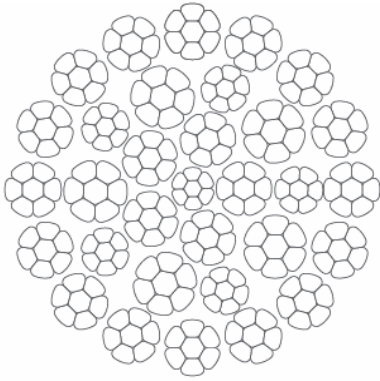
⚠ Never use with swivel

## 28x7 RR & C



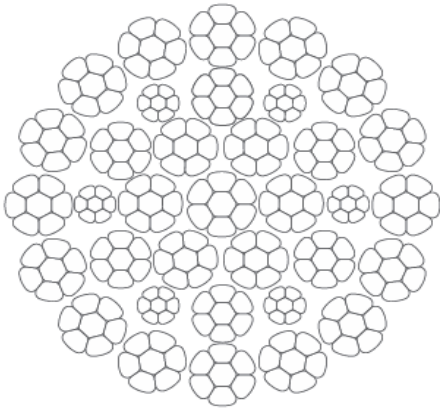
Diameter		Section	Mass	Minimum breaking load	
mm	inch			1960 MPa	2160 MPa
		mm <sup>2</sup>	kg/m	kN	kN
10	-	55.3	0.49	89.1	99
11	7/16	66.9	0.59	107.8	119.8
12	-	79.6	0.71	128.3	142.6
13	1/2	93.4	0.83	150	167.3
14	9/16	108.3	0.96	174.6	194.0
15	-	124.3	1.10	200	222.8
16	5/8	141.4	1.25	228.1	253.4
17	-	159.7	1.42	260	286.1
			<b>f - Fill Factor</b>	<b>k - Spinning Loss Factor</b>	
			0.700	0.823	0.830

### 32x7 RR & C



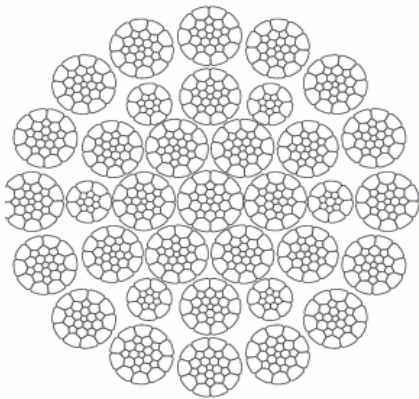
Diameter		Section	Mass	Minimum breaking load	
mm	inch			1960 MPa	2160 MPa
		mm <sup>2</sup>	kg/m	kN	kN
18	-	177.2	1.59	286	317.6
19	3/4	197.4	1.77	319	356
20	-	218.8	1.96	353	392.2
21	-	241.2	2.16	389	432.4
22	7/8	264.7	2.38	427	474.5
23	-	289.3	2.60	467	518.6
24	-	315.0	2.83	508	564.7
25	1	341.8	3.07	551	612.7
26	-	369.7	3.32	596	662.7
			<b>f - Fill Factor</b>	<b>k - Spinning Loss Factor</b>	
			0.700	0.823	0.830

### 35x7 RR & C



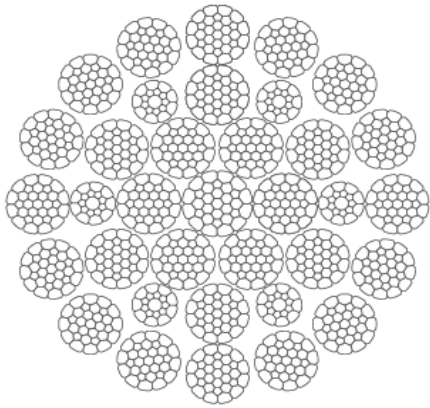
Diameter		Section	Mass	Minimum breaking load		
mm	inch			mm <sup>2</sup>	kg/m	kN
				1960 MPa	2160 MPa	
28	1-1/8	433.1	3.87	698	760.8	
29	-	464.6	4.15	749	816	
30	-	497.2	4.44	801	873	
32	-	565.7	5.05	912	994	
34	1-3/8	638.6	5.71	1029	1122	
36	-	715.9	6.40	1154	1258	
38	1-1/2	797.7	7.13	1285	1401	
40	-	883.8	7.90	1424	1553	
42	1-5/8	974.4	8.71	1570	1712	
44	-	1069.4	9.56	1723	1879	
46	-	1168.9	10.45	1884	2053	
48	1-7/8	1272.7	11.37	2051	2236	
				<b>f - Fill Factor</b>	<b>k - Spinning Loss Factor</b>	
				0.700	0.823	0.813

### 35x26 RR & C



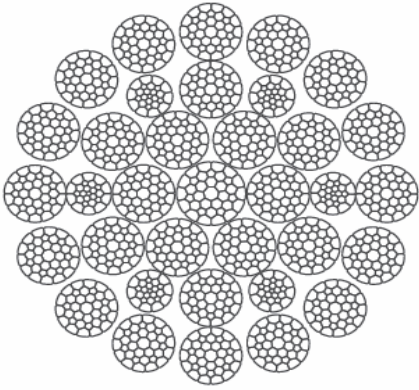
Diameter		Section	Mass	Minimum breaking load	
mm	inch	mm <sup>2</sup>	kg/m	kN	
			2160 MPa		
68	-	2602.7	23.42	4352	
70	-	2758.0	24.82	4611	
72	-	2917.9	26.26	4879	
			f - Fill Factor	k - Spinning Loss Factor	
			0.717	0.774	

### **35x31 RR & C**



Diameter		Section	Mass	Minimum breaking load	
mm	inch	mm <sup>2</sup>	kg/m	kN	kN
			1960 MPa      2060 MPa		
74	-	3040.2	27.37	-	5046
76	3	3206.8	28.87	-	5322
78	-	3377.8	30.41	-	5606
80	-	3553.2	31.99	-	5897
82	-	3718.5	33.47	-	6172
84	-	3825.2	34.20	-	6410
86	-	4009.5	35.85	-	6719
89	3-1/2	4294.1	38.40	-	7196
			f - Fill Factor	k - Spinning Loss Factor	
			0.724	0.850	0.742

### 35x36 RR & C

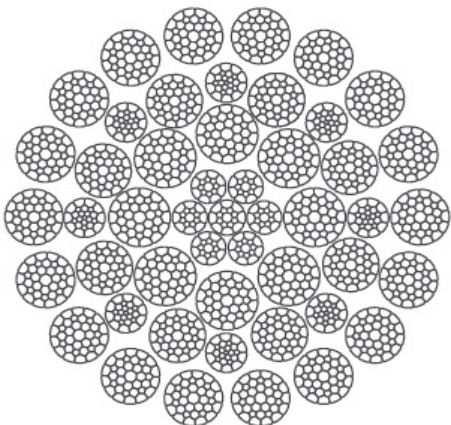


Diameter		Section	Mass	Minimum breaking load
mm	inch			
		mm <sup>2</sup>	kg/m	kN
				<b>2060 MPa</b>
93	-	4706.6	42.01	8043
97	-	5120.2	45.70	8750
100	-	5441.8	48.57	9299
102	-	5661.7	50.54	9675
109	-	6331.4	56.81	10800

f - Fill Factor	k - Spinning Loss Factor
0.690	0.870

### 49x36 RR & C

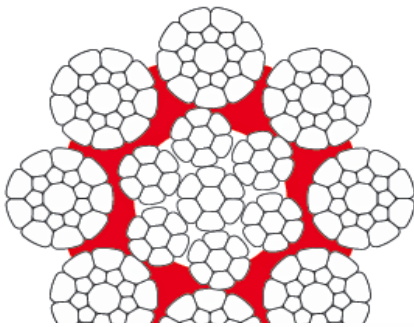


Diameter		Section	Mass	Minimum breaking load	
mm	inch	mm <sup>2</sup>	kg/m	kN	
			<b>2060 MPa</b>		
113	4-1/2	6804.7	61.05	11607	
118	-	7420.2	66.57	12657	
121	-	7802.3	70.00	13309	
125	-	8326.6	74.71	14204	
			<b>f - Fill Factor</b>	<b>k - Spinning Loss Factor</b>	
			0.680	0.870	

## Harbour Crane Boom Ropes

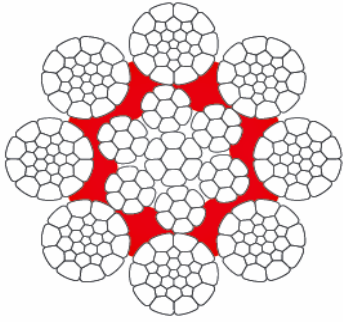
### Plastic Impregnated Boom Ropes (PIR) For Guided Systems Only

#### 8x19 PIR



Diameter		Section	Mass	Minimum breaking load	
mm	inch	mm <sup>2</sup>	kg/m	kN	kN
			<b>1960 MPa      2160 MPa</b>		
6.5	-	23.5	0.20	-	41.8
7	-	27.3	0.24	-	48.5
7.2	-	28.9	0.26	-	51.6
8	5/16	35.8	0.32	-	65.6
9	-	45.6	0.41	-	83.5
10	-	56.9	0.51	-	104
11	7/16	69.9	0.63	-	128
12	-	82.0	0.73	-	150.5
13	1/2	95.8	0.86	-	175.5
14	9/16	110.4	0.99	-	202
15	-	127.5	1.14	-	233.4
			<b>f - Fill Factor</b>	<b>k - Spinning Loss Factor</b>	
			0.720	-	0.845

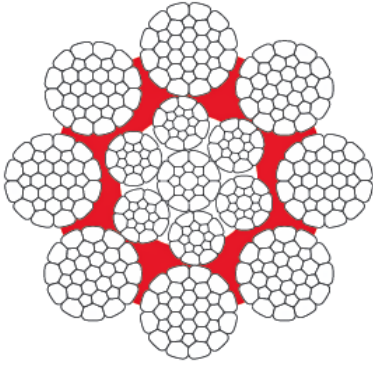
⚠ Never use with swivel

**8x26 PIR**

Diameter		Section	Mass	Minimum breaking load	
mm	inch	mm <sup>2</sup>	kg/m	kN	kN
			1960 MPa		
			2160 MPa		
16	5/8	140.1	1.26	231	245
18	-	177.3	1.59	292	310
19	3/4	197.5	1.77	326	345
20	-	218.9	1.96	361	382
22	7/8	264.8	2.37	437	463
23	-	291.2	2.60	481	503
24	-	317.1	2.83	523	548
25.4	1	355.2	3.17	586	614
26	-	372.1	3.32	614	643
27	-	401.3	3.58	655	685
28	1-1/8	420.8	3.72	705	737
29	-	451.4	3.99	756	790
30	-	483.1	4.27	809	846
32	1-1/4	549.6	4.86	920	962
			<b>f - Fill Factor</b>	<b>k - Spinning Loss Factor</b>	
			0.695	0.845	0.810

⚠ Never use with swivel

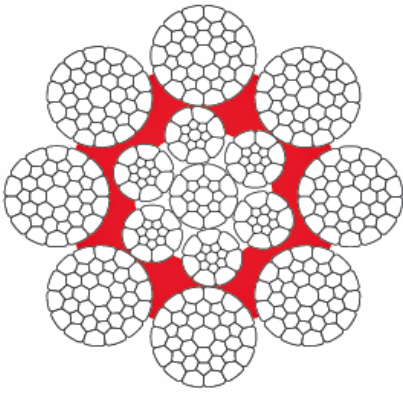
## 8x31 PIR



Diameter		Section mm <sup>2</sup>	Mass kg/m	Minimum breaking load	
mm	inch			kN	kN
				1960 MPa	2160 MPa
34	1-3/8	619.4	5.56	1030	1051
35	-	669.3	6.09	1091	1114
36	-	708.1	6.44	1161	1186
38	1-1/2	789.0	7.18	1294	1321
40	-	874.2	7.96	1434	1464
41.3	-	932.0	8.48	1529	1561
42	1-5/8	960.2	8.74	1578	1611
44	1-3/4	1053.8	9.60	1728	1765
44.5	-	1077.9	9.82	1768	1805
46	-	1151.8	10.49	1889	1929
48	1-7/8	1254.1	11.42	2057	2100
50	2	1342.3	12.15	2223	2269
51	-	1396.5	12.64	2303	2351
52	-	1451.8	13.14	2394	2444
54	2-1/8	1565.6	14.17	2582	-
56	-	1683.7	15.24	2776	-
58	2-1/4	1806.2	16.35	2978	-
			<b>f - Fill Factor</b>	<b>k - Spinning Loss Factor</b>	
			0.695	0.839	0.777

⚠ Never use with swivel

## 8x36 PIR

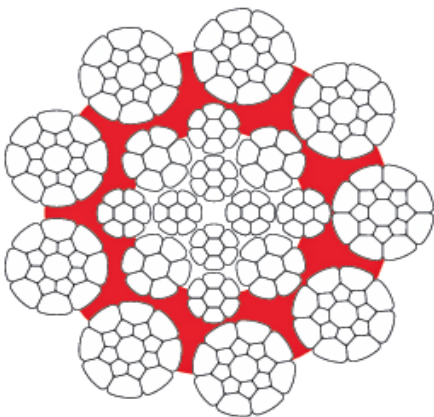


Diameter		Section	Mass	Minimum breaking load
mm	inch	mm <sup>2</sup>	kg/m	kN
				1960 MPa
60	2-3/8	1946.1	17.72	3192
62	-	2078.0	18.92	3408
64	-	2214.3	20.16	3632
65	-	2284.0	20.80	3746
			f - Fill Factor	k - Spinning Loss Factor
			0.695	0.837

⚠ Never use with swivel

## High Performance Plastic Impregnated Rope – Compacted with Warrington Core.

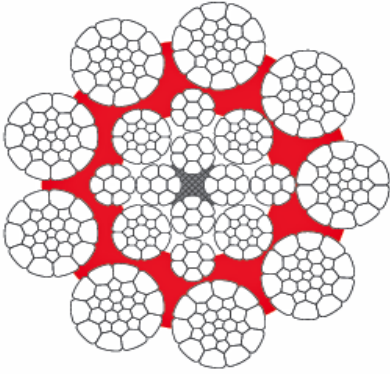
### 9X17 PIR High Performance



Section	Mass	Minimum breaking load	
mm <sup>2</sup>	kg/m	kN	kN
		1960 MPa	2160 MPa
135.4	1.20	219	239
171.7	1.54	277	302
191.4	1.72	308	336
		f - Fill Factor	k - Spinning Loss Factor
		0.675	0.815

⚠ Never use with swivel

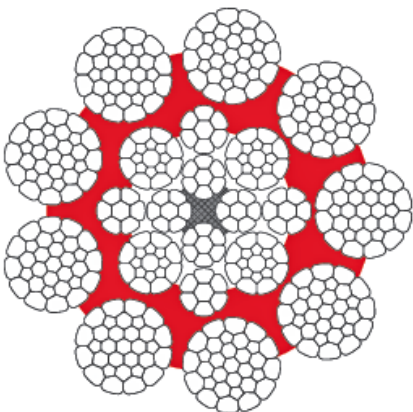
### 9x26 PIR High Performance



Diameter		Section mm <sup>2</sup>	Mass kg/m	Minimum breaking load	
mm	inch			kN	kN
				1960 MPa	2160 MPa
20	-	213.5	1.92	346	375
22	7/8	255.2	2.31	416	450
24	-	303.1	2.74	493	534
25	-	334.1	3.02	545	586
25.4	-	350.3	3.17	569	611
26	-	362.7	3.28	592	631
28	1-1/8	415.6	3.75	677	721
28.6	-	430.3	3.89	700	746
30	-	469.9	4.25	763	814
32	1-1/4	534.6	4.84	868	926
			<b>f - Fill Factor</b>	<b>k - Spinning Loss Factor</b>	
			0.675	0.830	0.815

⚠ Never use with swivel

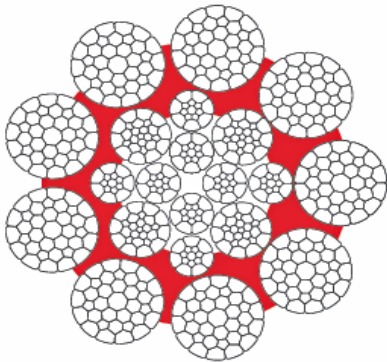
### 9x31 PIR High Performance



Diameter		Section	Mass	Minimum breaking load	
mm	inch	mm <sup>2</sup>	kg/m	kN	kN
			1960 MPa      2160 MPa		
34	1-3/8	617.5	5.56	1015	1075
35	-	652.9	5.88	1104	1155
36	-	689.2	6.21	1168	1222
38	1-1/2	763.9	6.90	1290	1362
40	-	857.6	7.76	1401	1487
41	-	918.4	8.24	1482	1558
42	-	953.8	8.73	1563	1631
44	-	1051.3	9.51	1716	1785
46	-	1142	10.31	1870	1945
48	-	1235.3	11.18	2030	2106
50	-	1343.2	12.17	2198	2272
			<b>f - Fill Factor</b>	<b>k - Spinning Loss Factor</b>	
			0.675	0.830	0.815

⚠ Never use with swivel

### 9x36 PIR High Performance

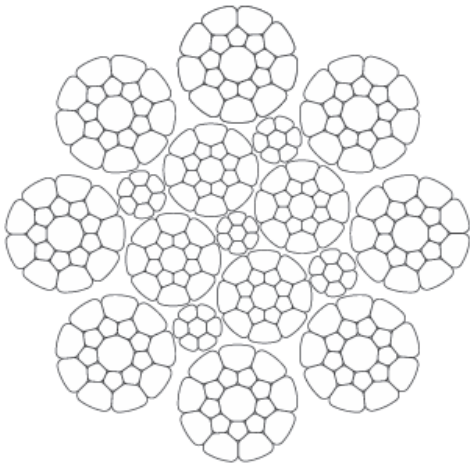


Diameter		Section	Mass	Minimum breaking load	
mm	inch	mm <sup>2</sup>	kg/m	kN	kN
			1960 MPa      2160 MPa		
52	-	1443.4	12.99	2343	2405
54	-	1556.6	14.01	2527	2594
56	2-1/8	1674.0	15.07	2716	2789
58	-	1784.2	16.03	2934	3012
60	-	1914.6	17.24	3160	3244
62	2-3/8	2080.0	18.75	3402	3492
64	-	2186.4	19.98	3625	3721
			<b>f - Fill Factor</b>	<b>k - Spinning Loss Factor</b>	
			0.675	0.830	0.790

⚠ Never use with swivel

# Parallel Closed Ropes – Must be anchored at both ends under tension

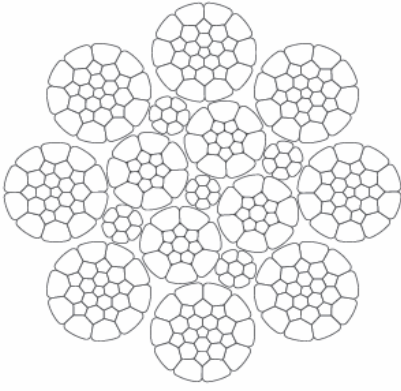
## 8x19 Parallel Closed Boom Rope



Diameter		Section	Mass	Minimum breaking load
mm	inch			
				<b>2160 MPa</b>
6.4	-	23.7	0.20	43
7	-	28.3	0.25	51
7.2	-	29.9	0.26	54
8	5/16	36.8	0.32	67
9	-	46.6	0.40	85
10	-	57.1	0.50	105
11	7/16	69.1	0.60	126.4
12	-	82.1	0.71	150
13	1/2	95.9	0.83	175
14	9/16	112.2	0.97	205
15	-	130.0	1.13	238.6
			<b>f - Fill Factor</b>	<b>k - Spinning Loss Factor</b>
			0.733	0.845

⚠ Never use with swivel

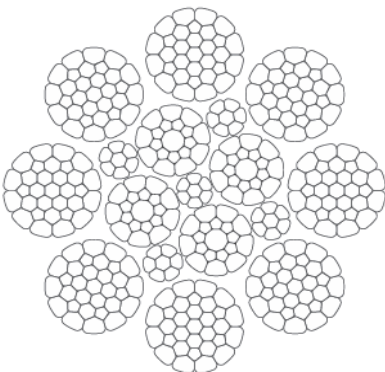
## 8x26 Parallel Closed Boom Rope



Diameter		Section	Mass	Minimum breaking load
mm	inch			
				<b>2160 MPa</b>
16	5/8	149.1	1.31	273
18	-	187.4	1.64	343
19	3/4	208.8	1.83	382
20	-	231.3	2.02	423
22	7/8	279.9	2.45	512
24	-	333.2	2.92	609
25	-	361.5	3.16	661
26	-	379.9	3.32	703
28	1-1/8	454.0	3.96	821
28.6	-	473.7	4.13	856
			<b>f - Fill Factor</b>	<b>k - Spinning Loss Factor</b>
			0.733	0.845

⚠ Never use with swivel

## 8x31 Parallel Closed Boom Rope



Diameter		Section	Mass	Minimum breaking load
mm	inch	mm <sup>2</sup>	kg/m	kN
				2160 MPa
30	-	521.2	4.55	942
32	1-1/4	602.8	5.29	1086
34	1-3/8	680.5	5.97	1226
36	-	762.9	6.69	1375
38	1-1/2	842.2	7.38	1495
40	-	943.3	8.27	1658
42	1-5/8	1040.0	9.12	1828
44.5	-	1117.1	9.74	2003
46	-	1193.7	10.41	2140
48	1-7/8	1296.6	11.35	2309
50	2	1406.9	12.32	2505
50.8	-	1452.3	12.71	2586
52	-	1521.7	13.32	2710
			<b>f - Fill Factor</b>	<b>k - Spinning Loss Factor</b>
			0.733	0.830

⚠ Never use with swivel

