



WireCo[®]
WorldGroup

Synthetic Ropes

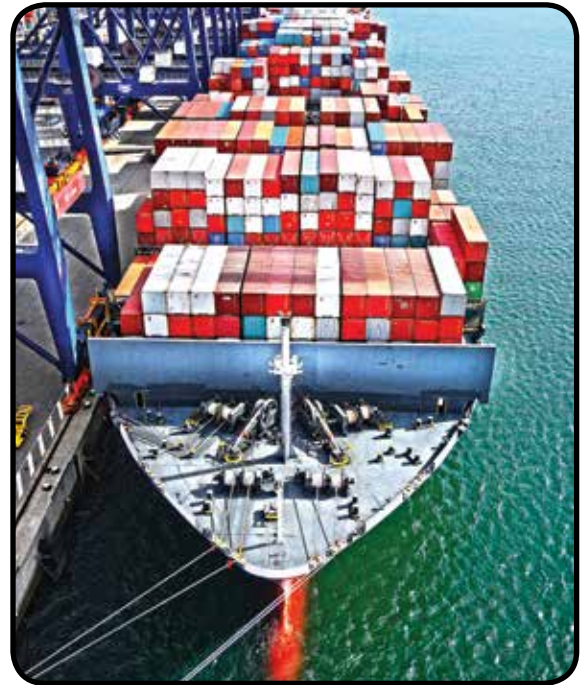
United States & Canada





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Preface

WireCo WorldGroup is the market, manufacturing and technical leader in wire and synthetic rope manufacturing, providing a consultative approach to offer customers a single, reliable source for solutions that fit their specific application and budget needs. Engineering our products for specific applications is a highly specialized field – with exacting standards. Standards that we live by every day. Across the entire WireCo WorldGroup organization, we draw from the industry’s deepest pool of experienced engineers to drive results for your application.

Our synthetic ropes division has been leading the maritime, mooring and handling operation industry for decades. We continue to focus on specialized fiber ropes with added value in breaking strength, service life, safety and ease of use. Our commitment to continuous product development by the industry’s most qualified technical staff has resulted in a broad range of high performance, cost-effective ropes.

This catalog provides information on WireCo WorldGroup’s synthetic mooring ropes for vessels, as well as general purpose ropes for industrial or other onshore applications. We have a balanced assortment of competitive polypropylene ropes, composite ropes and HMPE (high modulus polyethylene) ropes.

WireCo builds on a strong track record in mooring, tugging and winching applications and together with our broad array of constructions and materials, we are there to ensure effective and efficient operations for your application. Please contact our sales department for guidance on the best WireCo synthetic rope for you.





X-Trema Line



X-Trema Line is a twelve-strand, high-modulus polyethylene rope made from authentic Dyneema® fibers. Our X-Trema Line has an unmatched strength-to-weight ratio. Compared to a steel wire rope of the same size, it will match the breaking strength at only 15% of the weight.

With a specific gravity of 0.98 it floats in water. It also features an excellent resistance to abrasion, UV, salt water and tension fatigue. X-Trema Line is widely used in mooring, lifting, towing and offshore installations.

Characteristics

Melting point:

293 °F (145 °C)

Specific gravity:

0.98

Abrasion resistance:

excellent

Elongation at break:

approximately 2.5%

X-Trema Line elongation at a given load factor, as a percentage of the minimum breaking force of the rope:

MBF	Elongation
20%	0.5%
30%	0.7%
40%	0.8%
50%	1.0%

X-Trema Line

IMPERIAL				METRIC			
Diameter (in)	Circumference (in)	Weight (lb/100 ft)	MBF (lb)	Diameter (mm)	Weight (kg/100 m)	MBF (kN)	MBF (metric tons)
1/8	3/8	0.5	3,747	3	0.8	15.1	1.7
3/16	9/16	1.0	7,275	5	1.5	28.9	3.3
1/4	3/4	1.6	10,582	6	2.3	42.3	4.8
5/16	1	2.6	16,975	8	3.9	68.1	7.7
3/8	1 1/4	3.6	23,148	10	5.4	92.5	10.5
7/16	1 1/4	4.7	29,101	11	7.0	117	13.2
1/2	1 1/2	6.5	35,714	12	9.7	158	16.2
9/16	1 3/4	8.6	41,667	14	12.8	204	18.9
5/8	2	10.9	57,320	16	16.2	254	26.0
3/4	2 1/4	11.7	70,327	18	17.4	282	31.9
13/16	2 1/2	13.8	83,996	20	20.6	337	38.1
7/8	2 3/4	17.5	105,380	22	26.1	422	47.8
1	3	20.8	122,356	24	30.9	490	55.5
1 1/16	3 1/4	24.9	143,961	26	37.0	576	65.3
1 1/8	3 1/2	29.0	164,023	28	43.2	657	74.4
1 1/4	3 3/4	32.5	182,101	30	48.4	729	82.6
1 5/16	4	37.2	204,588	32	55.3	819	92.8
1 3/8	4 1/8	41.8	227,076	34	62.2	909	103
1 1/2	4 1/2	45.7	244,713	36	68.0	981	111
1 9/16	4 3/4	51.1	271,168	38	76.0	1,090	123
1 5/8	5	57.2	302,033	40	85.1	1,210	137
1 3/4	5 1/2	69.9	357,148	44	104	1,430	162
2	6	83.3	425,492	48	124	1,700	193
2 1/8	6 1/2	103	507,063	52	153	2,030	230
2 1/4	7	114	557,769	56	170	2,230	253
2 1/2	7 1/2	134	648,159	60	200	2,590	294
2 5/8	8	153	723,116	64	228	2,900	328
2 3/4	8 1/2	171	798,073	68	254	3,190	362
3	9	192	884,053	72	285	3,540	401
3 1/8	9 1/2	206	943,578	76	307	3,780	428
3 1/4	10	226	1,022,934	80	336	4,090	464
3 5/8	11	272	1,210,325	88	405	4,840	549
4	12	319	1,395,511	96	474	5,580	633

→ Polysteel



Made from high-strength, in-house extruded fibers, WireCo Polysteel products are smaller, lighter and easier to handle than conventional polypropylene ropes.

Using carefully selected raw materials, and manufactured in-house using the latest extrusion methods, Polysteel eight-strand ropes can be used for mooring vessels, as well as towing vessels and barges at short distances.

Polysteel rope does not absorb water, making it easy to handle under all weather conditions, especially freezing conditions. The rope's sturdy eight-strand construction is ideal for storage on a winch drum.

Characteristics

Melting point:
293° - 329°F (145° - 165°C)

Specific gravity:
0.91

Abrasion resistance:
good

Elongation at break:
approximately 17%

Polysteel elongation at a given load factor, as a percentage of the minimum breaking force of the rope:

MBF	Elongation
20%	5%
30%	8%
40%	10%
50%	12%

Polysteel

IMPERIAL				METRIC			
Diameter (in)	Circumference (in)	Weight (lb/100 ft)	MBF (lb)	Diameter (mm)	Weight (kg/100 m)	MBF (kN)	MBF (metric tons)
1 5/16	4	30.9	40,565	32	46.0	162	18.4
1 1/2	4 1/2	39.3	51,147	36	58.5	205	23.2
1 5/8	5	48.4	62,170	40	72.0	249	28.2
1 3/4	5 1/2	59.1	73,634	44	88.0	295	33.4
2	6	69.9	86,421	48	104	345	39.1
2 1/8	6 1/2	82.0	100,089	52	122	401	45.4
2 1/4	7	95.4	114,419	56	142	458	51.9
2 1/2	7 1/2	110	131,174	60	163	525	59.5
2 5/8	8	124	148,370	64	185	594	67.3
3	9	157	185,629	72	234	743	84.2
3 1/4	10	195	227,075	80	290	909	103
3 5/8	11	236	273,372	88	351	1,094	124
4	12	280	321,874	96	417	1,289	146
4 1/4	13	329	370,376	104	490	1,474	167
4 5/8	14	383	427,696	112	570	1,712	194
5	15	437	489,425	120	650	1,959	222
5 1/4	16	497	553,359	128	740	2,215	251
5 1/2	16 1/2	564	621,702	136	840	2,489	282
5 3/4	17 1/4	632	692,250	144	940	2,771	314

Astra Line



Astra Line is a durable line with excellent elongation properties, high strength, and abrasion resistance.

The outstanding performance features of Astra Line result from a specially-composed yarn comprising two different fibers: a polymer fiber core which is carefully over-twisted with high grade polyester fibers.

Astra Line's construction protects the rope from external and internal abrasion. During everyday use, the ropes will at certain points be in contact with frames, fairleads and other parts of the vessel. The polyester yarns provide resistance against such wear.

Astra Line has high elastic elongation properties, making the rope well-suited to the demands of moorings on the quay or between two vessels. The movement of the two vessels during towing is largely compensated by the elongation properties of the Astra Line.

Astra Line elongation at a given load factor, as a percentage of the minimum breaking force of the rope:

MBF	Elongation
20%	8%
30%	10%
40%	12%
50%	14%

Astra 3-strand White

IMPERIAL				METRIC			
Diameter (in)	Circumference (in)	Weight (lb/100 ft)	MBF (lb)	Diameter (mm)	Weight (kg/100 m)	MBF (kN)	MBF (metric tons)
5/16	1	2.6	3,086	8	3.8	12.2	1.4
3/8	1 1/4	3.7	4,409	10	5.5	18.0	2.0
1/2	1 1/2	5.4	6,393	12	8.0	25.9	2.9
9/16	1 3/4	7.3	8,818	14	10.9	35.5	4.0
5/8	2	9.5	11,464	16	14.1	45.9	5.2
3/4	2 1/4	12.0	14,550	18	17.8	58.3	6.6
13/16	2 1/2	14.8	17,857	20	22.1	71.5	8.1
7/8	2 3/4	18.0	21,605	22	26.8	86.5	9.8
1	3	21.4	26,014	24	31.9	104	11.8
1 1/16	3 1/4	25.3	29,982	26	37.6	120	13.6
1 1/8	3 1/2	29.2	34,171	28	43.4	137	15.5
1 1/4	3 3/4	33.5	38,580	30	49.9	154	17.5
1 5/16	4	38.0	43,210	32	56.5	173	19.6
1 1/2	4 1/2	48.0	52,910	36	71.4	215	24.4

→ Astra Line



Characteristics

Melting point:
329° - 500° F (165° - 260° C)

Specific gravity:
1.14%

Abrasion resistance:
excellent

Elongation at break:
approximately 20%

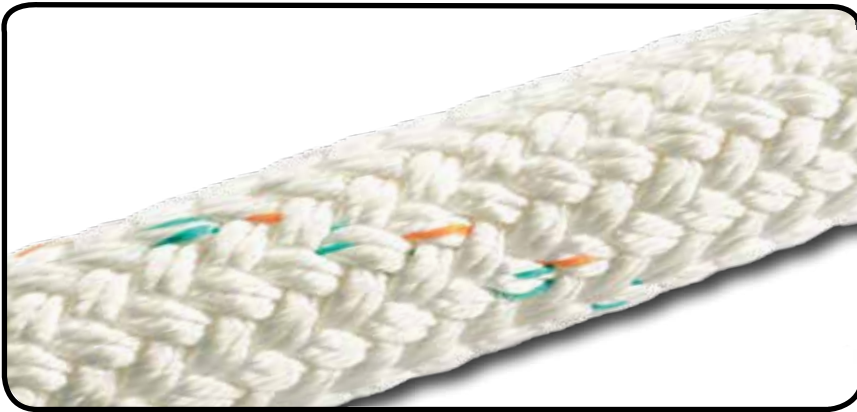
Astra 8-strand White

IMPERIAL				METRIC			
Diameter (in)	Circumference (in)	Weight (lb/100 ft)	MBF (lb)	Diameter (mm)	Weight (kg/100 m)	MBF (kN)	MBF (metric tons)
1 5/8	5	59.1	80,909	40	88.0	324	36.7
1 3/4	5 1/2	71.9	97,223	44	107	389	44.1
2	6	85.3	115,081	48	127	461	52.2
2 1/8	6 1/2	100	134,040	52	149	537	60.8
2 1/4	7	116	154,764	56	173	620	70.2
2 1/2	7 1/2	133	176,590	60	198	707	80.1
2 5/8	8	151	200,179	64	225	801	90.8
3	9	192	251,326	72	285	1,006	114
3 1/4	10	237	306,442	80	352	1,227	139
3 5/8	11	286	370,376	88	426	1,483	168
4	12	341	436,514	96	507	1,748	198
4 1/4	13	400	509,267	104	595	2,039	231
4 5/8	14	464	588,633	112	690	2,357	267
5	15	532	670,204	120	792	2,683	304

Astra 8-strand Tails 11 meters

IMPERIAL				METRIC			
Diameter (in)	Circumference (in)	Weight (lb/tail)	MBF (lb)	Diameter (mm)	Weight (kg/tail)	MBF (kN)	MBF (metric tons)
2 1/4	7	66	139,288	56	30	620	70.2
2 1/2	7 1/2	75	158,931	60	34	707	80.1
2 5/8	8	88	180,162	64	40	801	90.8
2 3/4	8 1/2	99	202,384	68	45	900	102
3	9	110	226,194	72	50	1,006	114
3 1/8	9 1/2	126	251,988	76	57	1,121	127
3 1/4	10	143	275,798	80	65	1,227	139
3 1/2	10 1/2	161	307,544	84	73	1,368	155
3 5/8	11	181	333,339	88	82	1,483	168

→ Libra Line PA



Libra Line PA

Libra Line is an excellent double braided rope produced with high-quality multifilament nylon to meet every demanding application in marine and offshore environments.

The well-balanced braided sheath is carefully applied over a braided core, giving Libra Line PA outstanding abrasion resistance, very good breaking strength and a solid recovery from stretch.



Characteristics

Melting point:
482 °F (250 °C)

Specific gravity:
1.14

Abrasion resistance:
excellent

Elongation at break:
approximately 30%

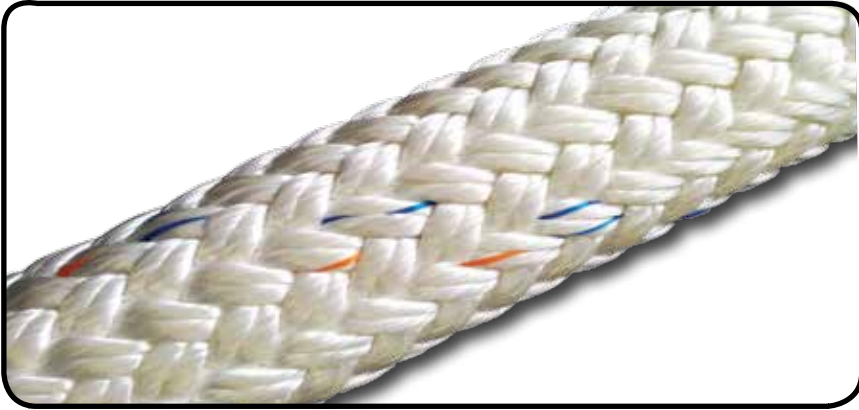
Libra Line PA elongation at a given load factor, as a percentage of the minimum breaking force of the rope:

MBF	Elongation
20%	15%
30%	20%
40%	22%
50%	24%

Libra Line PA (Nylon) - Meets Mil Spec: MIL-DTL-24050

IMPERIAL				METRIC			
Diameter (in)	Circumference (in)	Weight (lb/100 ft)	MBF (lb)	Diameter (mm)	Weight (kg/100 m)	MBF (kN)	MBF (metric tons)
3/4	2 1/4	13.9	17,416	18	20.7	69.6	7.9
7/8	2 3/4	18.4	26,234	22	27.4	105	11.9
1	3	24.3	30,864	24	36.2	124	14.0
1 1/8	3 1/2	33.0	42,108	28	49.2	169	19.1
1 1/4	3 3/4	38.0	48,942	30	56.6	196	22.2
1 5/16	4	43.3	55,997	32	64.4	225	25.4
1 1/2	4 1/2	54.6	71,209	36	81.3	285	32.3
1 5/8	5	67.6	86,641	40	101	347	39.3
1 3/4	5 1/2	82.0	107,144	44	122	428	48.6
2	6	97.1	121,695	48	145	487	55.2
2 1/8	6 1/2	114	146,166	52	170	585	66.3
2 1/4	7	132	166,228	56	196	666	75.4
2 1/2	7 1/2	152	190,258	60	226	762	86.3
2 5/8	8	173	214,068	64	258	857	97.1
3	9	219	268,963	72	326	1,080	122
3 1/4	10	270	317,465	80	402	1,267	144

→ Libra Line PET



Characteristics

Melting point:
500° F (260° C)

Specific gravity:
1.38

Abrasion resistance:
excellent

Elongation at break:
approximately 17%

Libra Line® PET (Polyester)

Libra Line is also available in polyester material. The high-tenacity multifilament yarns warrant excellent abrasion and fatigue resistance, resulting in good performance on a fairlead. Its polyester yarns unquestionably provide superb strength in dry and wet conditions. Libra Line PET does not absorb water, making the rope flexible and easy to splice.

WireCo selects the best raw materials in its production to ensure an indisputable level of quality. Libra Line PA and PET are very suitable for towing and mooring operations.

Libra Line PET elongation at a given load factor, as a percentage of the minimum breaking force of the rope:

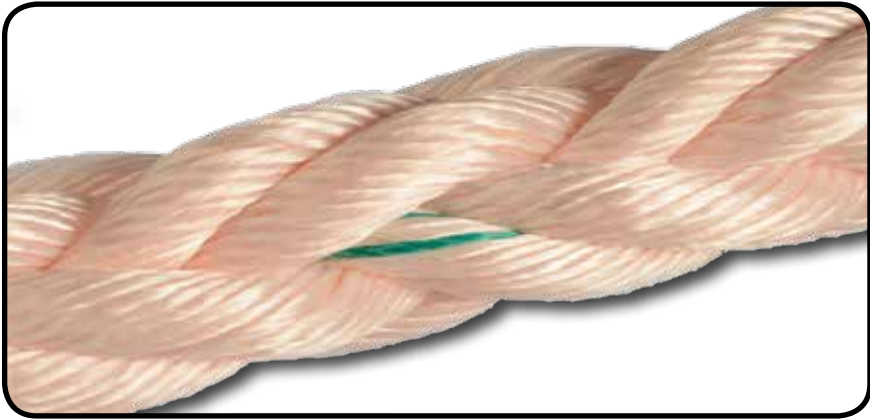
MBF	Elongation
20%	3%
30%	4%
40%	7%
50%	9%

Libra Line PET (Polyester) - Meets Mil Spec: MIL-DTL-24677

IMPERIAL				METRIC			
Diameter (in)	Circumference (in)	Weight (lb/100 ft)	MBF (lb)	Diameter (mm)	Weight (kg/100 m)	MBF (kN)	MBF (metric tons)
3/4	2 1/4	17.9	18,298	18	26.6	73.5	8.3
7/8	2 3/4	23.2	25,132	22	34.6	101	11.4
1	3	31.9	32,848	24	47.5	131	14.9
1 1/8	3 1/2	40.4	41,446	28	60.1	166	18.8
1 1/4	3 3/4	49.8	50,926	30	74.1	204	23.1
1 5/16	4	55.0	55,997	32	81.9	225	25.4
1 1/2	4 1/2	71.8	67,902	36	107	272	30.8
1 5/8	5	84.0	82,232	40	125	329	37.3
1 3/4	5 1/2	97.7	93,255	44	145	374	42.3
2	6	128	116,624	48	191	467	52.9
2 1/8	6 1/2	144	130,954	52	214	525	59.4
2 1/4	7	161	148,370	56	240	594	67.3
2 1/2	7 1/2	199	180,117	60	296	721	81.7
2 5/8	8	220	200,179	64	327	801	90.8
3	9	287	257,940	72	427	1,031	117
3 1/4	10	337	308,646	80	502	1,232	140



→ Orion Premium



Orion Premium is a durable line with excellent elongation properties.

The outstanding performance features of Orion Premium result from a specially-composed yarn comprising two different fibers: a polymer fiber core which is carefully over-twisted with high grade polyester fibers. These composite yarns offer high strength, in combination with high abrasion resistance.

The composition of the two fibers in Orion Premium is different from the Astra Line. It produces a floating Orion Premium rope, with a slight reduction in elongation properties and abrasion resistance compared with Astra Line, which is favored by many shipowners.

Characteristics

Melting point:
329° - 500° F (165° - 260° C)

Specific gravity:
0.98

Abrasion resistance:
very good

Elongation at break:
approximately 17%

Orion Premium elongation at a given load factor, as a percentage of the minimum breaking force of the rope:

MBF	Elongation
20%	7%
30%	9%
40%	11%
50%	13%

Orion Premium

IMPERIAL				METRIC			
Diameter (in)	Circumference (in)	Weight (lb/100 ft)	MBF (lb)	Diameter (mm)	Weight (kg/100 m)	MBF (kN)	MBF (metric tons)
1 5/8	5	53.8	72,972	40	80.0	292	33.1
1 3/4	5 1/2	62.8	84,877	44	93.4	340	38.5
2	6	75.9	102,514	48	113	410	46.5
2 1/8	6 1/2	89.4	120,151	52	133	481	54.5
2 1/4	7	103	137,788	56	153	552	62.5
2 1/2	7 1/2	119	157,630	60	177	631	71.5
2 5/8	8	136	179,676	64	202	719	81.5
2 3/4	8 1/2	153	202,384	68	228	810	91.8
3	9	171	224,871	72	255	900	102
3 1/8	9 1/2	189	246,917	76	282	989	112
3 1/4	10	210	271,168	80	312	1,086	123
3 5/8	11	255	330,693	88	379	1,324	150
4	12	302	390,217	96	449	1,562	177
4 1/4	13	353	454,151	104	526	1,818	206
4 5/8	14	413	522,494	112	614	2,092	237

→ Ocean 12



Characteristics

Melting point:
284 °F (140 °C)

Specific gravity:
±0.93

Abrasion resistance:
very good

TCLL Value:
78.5%

Ocean 12 is a high-tenacity polypropylene rope that is more stable and easier to splice due to its 12-strand construction. The materials used to make Ocean 12 provide an upgraded abrasion resistance and flotation capabilities, and the rope remains flexible when wet.

Ocean 12 is widely used in towing, mooring, winch lines, inland shipping and offshore applications.

Ocean 12

IMPERIAL				METRIC			
Diameter (in)	Circumference (in)	Weight (lb/100 ft)	MBF (lb)	Diameter (mm)	Weight (kg/100 m)	MBF (kN)	MBF (metric tons)
5/8	2	.08	10,824	16	12.8	48.2	4.91
13/16	2 1/2	.13	16,446	20	19.7	73.2	7.46
1	3	.18	23,148	24	28.1	103	10.5
1 1/8	3 1/2	.25	31,305	28	38.2	139	14.2
1 5/16	4	.33	40,565	32	50.0	180	18.4
1 1/2	4 1/2	.42	50,706	36	63.0	226	23.0
1 5/8	5	.52	62,390	40	78.1	278	28.3
1 3/4	5 1/2	.63	74,957	44	94.2	333	34.0
2	6	.75	88,625	48	112	394	40.2
2 1/8	6 1/2	.88	103,396	52	132	460	46.9
2 1/4	7	1.02	120,151	56	153	534	54.5
2 1/2	7 1/2	1.18	137,127	60	176	610	62.2
2 5/8	8	1.34	155,205	64	200	691	70.4
2 3/4	8 1/2	1.51	174,605	68	226	777	79.2
3	9	1.70	195,108	72	253	868	88.5
3 1/8	9 1/2	1.89	216,714	76	282	964	98.3
3 1/4	10	2.10	240,303	80	313	1,065	109



Tuf-Tow, TufStrop



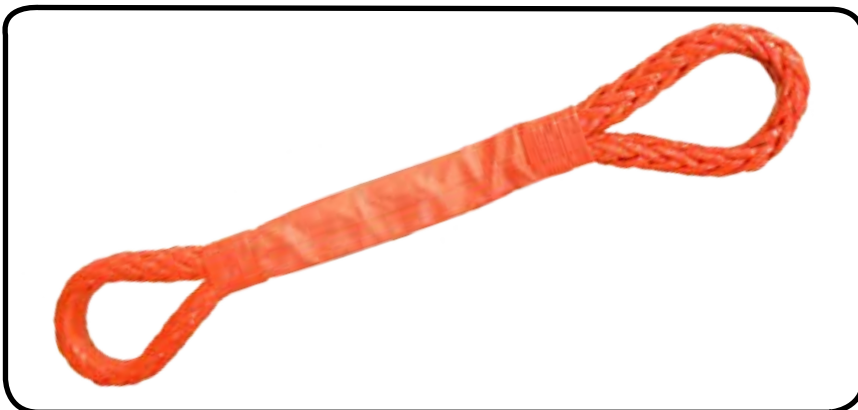
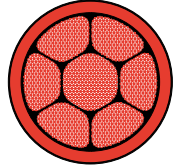
TufTow

Part Number (Dia.)		Approx Weight		RBS	
in	mm	lb/ft	kg/m	lb	kN
1	25	0.4	0.5	100,000	445
1 1/2	38	0.6	0.9	210,000	934
1 3/4	44	0.9	1.3	310,000	1,379
2 3/4	70	1.8	2.7	590,000	2,624
3	76	2.5	3.7	830,000	3,692

TufTow™

Application: Towing Lines

- Fabricated from high strength aramid fiber for maximum strength-to-diameter ratio and low stretch for safety.
- Double protective jacketing
 - Inner braided polyester jacket
 - Outer urethane coating
- Spliced eyes furnished as soft eyes reinforced with high-tenacity fiber or with optional wire rope thimbles ("hard eyes").
- Standard colors are black or orange. Other colors available upon request.



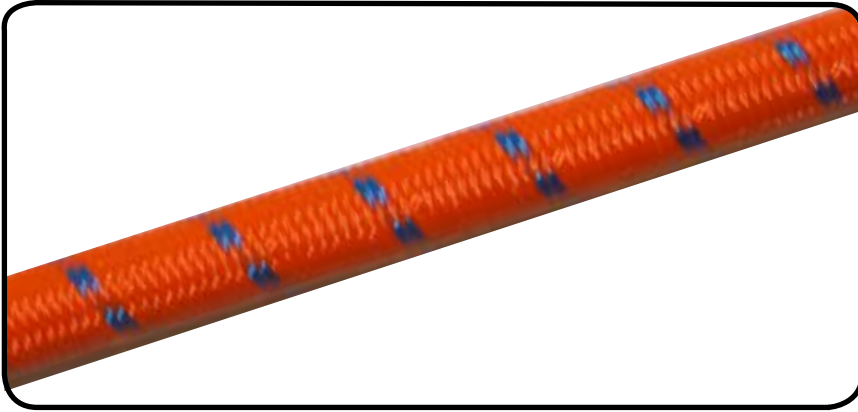
TufStrop™

Applications: Safety support assemblies designed for the demands of ultra-class off-highway haul trucks

- Made from high-strength, low-stretch aramid fiber grommet
- Double layered ultra-tough jacketing
- Primary jacket composed of heavy polyester braid tightly secured to the core
- Tough outer urethane coating protects sling from abrasion, eliminates UV damage and prevents dirt and other foreign material from penetrating
- 23-ton safe working load. Other sizes available upon request.
- Made to customer length specifications
- Also available in high-visibility safety yellow



PowerPull



PowerPull pulling lines are designed for the most demanding stringing and pulling applications, with the toughest protective jacketing in the industry. They are made from high-strength, fatigue-resistant advanced fibers which are lighter and easier to handle than steel, and they are stronger and more durable than braided fiber ropes.

- Torque-neutral by parallel strand core design
- Double-jacketed
- Inner polymer jacket and internal lubricating adhesive assures core strand integrity
- Outer braided, resin-impregnated polyester jacket offers unsurpassed toughness
- Strength of steel at a fraction of the weight
- Very low elongation
- Retains superior flexibility at low temperatures
- QuickSplice™ and QuickEye™ available for fast end terminations and mid-rope repairs (no need for complicated splices).



PowerPull is available in two fiber types:

Part Number (dia)		PowerPull-H with Dyneema® HMPE fiber				PowerPull-P with high-strength polyester fiber			
		Weight		RBS*		Weight		RBS*	
(in)	(mm)	lb/1000 ft	kg/100 m	lbf	kN	lb/1000 ft	kg/100 m	lbf	kN
3/8	10	49.0	7.3	17,000	75.6	51.5	7.7	5,900	26.2
7/16	11	59.2	8.8	20,000	89.0	70.8	10.6	8,400	37.4
1/2	13	67.6	10.1	24,500	109	80.6	12.0	11,000	48.9
9/16	14	94.3	14.1	32,000	142	116	17.4	14,800	65.8
5/8	16	111	16.5	38,000	169	139	20.6	17,800	79.2
3/4	19	159	23.7	60,000	267	190	28.4	25,300	113
7/8	22	227	33.9	85,000	378	248	37.0	31,300	139
1	25	291	43.3	110,000	489	297	44.2	36,100	161

*RBS listed is minimum rated breaking strength with spliced eye terminations. Increase by 10% when comparing against European standard (plain ends.)



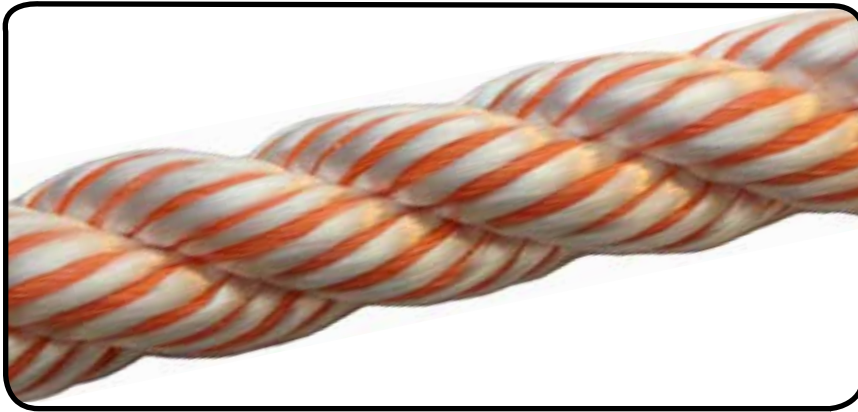
Swing Rope

Characteristics

UV Resistance:
good

Abrasion resistance:
very good

Chemical Resistance:
good



Working in the offshore oil and gas industry can be demanding, and particularly challenging is transferring personnel to and from vessels. A swing rope is commonly used for this purpose.

WireCo's polypropylene monofilament and polyester 3-strand swing rope is UV, abrasion and chemical resistant.



Swing Rope

METRIC		
Diameter (mm)	Linear Weight (g/m)	MBF (lb)
26	315	16,800



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