

PILCO



ESTD. 1890

ABDULHUSEIN PEERBHOY & SONS

A PEERBHOY BLDG • 66-68 NARAYAN RAO KOLI MARG (BHANDARI ST.) • MUMBAI 400 003 • INDIA
TEL: 3423956, 3420014 • FACSIMILE: +91+22+3415133 • EMAIL: apeerbhoy@hotmail.com

GENERAL IDEA OF WIRE ROPES

A wire rope serves as a flexible tackle to transmit pulling force over a distance, to perform hauling, hoisting or suspending operations.

To achieve the necessary flexibility, together with the strength and to fulfill its desired function, the rope is made up of elements called wires and strands. The rope is formed generally of six strands. Eight strand ropes are also in use for more flexibility.

The uses of wire ropes are so numerous and working conditions so variable that it is important to choose the right type of rope for the duty it has to perform. Major uses are: Lifting Slings, Drilling, Shipping, Elevator. We suggest that you call the advice of our expertises in selecting Wire Ropes.



STRUCTURE AND CHARACTERISTICS OF WIRE ROPES



TENSILE DESIGNATIONS:

The tensile designations of the principal wires used in the rope are 160/180 Kgs./mm² i.e.: PS=Plow Steel, IPS=Improved Plow Steel, EIPS=Extra Improved Plow Steel.

LAYS OF WIRE ROPES:

The lays of wire ropes, with the few exceptions, are roughly divided into two kinds — Regular Lays and Lang's Lays. The Lang's Lay rope offers a better wearing surface when in use and can be expected to serve for a longer period of time in special applications.

TYPE & CORE:

Wires of the rope are finished, either, galvanized or ungalvanized. The core is the central axis of the wire rope, around which the strands are laid. The core helps to maintain the correct relative position of the strands during the operative life of the rope. The core may be either fibre (FMC), polypropylene (P.P.) or steel (IWRC).

CONSTRUCTION:

6x7, 6x12, 6x19, 6x24, 6x25, 6x36, 6x37, 6x41, 8x19, 18x7 or 34x7 . . .

Please refer to tables on reverse, for breaking loads.

All our products comply with ISI specifications and some are also ISO9000 approved.

We can also offer from exstock STAINLESS STEEL & COPPER WIRE ROPES.

Approved by: American Petroleum Institute, Lloyd's Register of Shipping, American Bureau of Shipping, Det Norske Veritas and Bureau Veritas of shipping.

WIRE ROPES

ABDULHUSEIN PEERBHOY & SONS

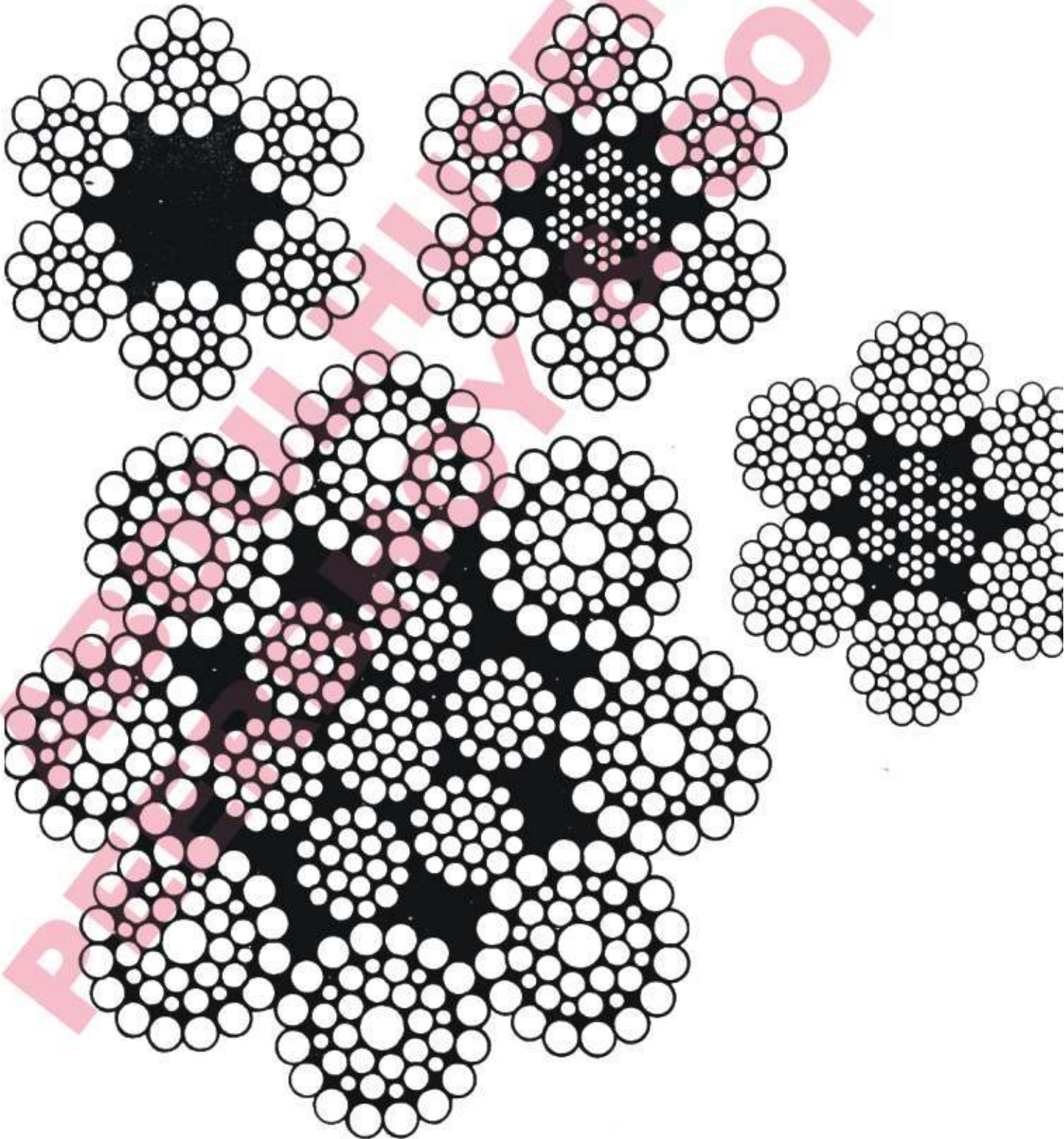
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Norm	MASS 6x19 & 6x37		6x19 (12/6/1) IS:2200/89		6x37 (18/12/6/1) IS:2266/89		MASS 6x19F & 6x36, 6x41		6x19 Filler (12/6+6F/1) IS:2266/89		6x36 (14/7+7/7/1) 6x41 (16/8+8/8/1) IS:2266/89		MASS 17x7 & 18x7		17x7, 18x7 (6/1) IS:2266/89		6x24		
	Kg./100Mtrs	FMC IWRC	MIN BREAKING LOAD KN	160Kg./mm ² 180Kg./mm ²	FMC IWRC	FMC IWRC	FMC IWRC	Kg./100Mtrs	FMC IWRC	MIN BREAKING LOAD KN	160Kg./mm ² 180Kg./mm ²	FMC IWRC	FMC IWRC	Kg/100 Mtrs.	FMC IWRC	MIN BREAKING LOAD KN	160Kg./mm ² 180Kg./mm ²	FMC IWRC	IS:2581/77
5	8.65	9.5	14	14	18	20	21	23	-	-	-	-	-	-	-	-	-	-	-
6	12.5	13.7	19	21	26	28	28	30	-	-	-	-	-	-	-	-	-	-	-
7	17.0	18.6	29	32	30	32	33	36	34	37	38	41	42	45	47	51	51	51	51
8	22.1	24.4	31	33	37	40	42	46	43	46	48	52	56	58	63	63	63	63	63
9	28.0	30.8	39	42	47	50	52	56	53	57	60	65	68	71	76	76	76	76	76
10	34.6	38.1	48	52	58	60	63	68	64	69	72	78	81	84	89	89	89	89	89
11	41.9	46.1	58	63	66	72	75	81	76	82	86	93	95	99	106	106	106	106	106
12	49.8	54.8	69	75	78	84	88	95	80	90	97	109	112	114	124	124	124	124	124
13	58.5	64.4	82	88	92	99	107	115	94	104	112	127	133	133	142	142	142	142	142
14	67.8	74.6	95	102	104	112	117	127	107	119	129	145	153	153	161	161	161	161	161
15	77.8	85.6	110	117	118	128	134	144	121	136	147	165	173	173	182	182	182	182	182
16	88.6	97.4	124	133	134	144	151	163	135	155	166	187	194	194	204	204	204	204	204
17	100	110	139	151	150	162	169	183	152	172	186	209	216	216	228	228	228	228	228
18	112	123	156	160	167	180	188	203	167	191	207	233	239	239	252	252	252	252	252
19	125	137	174	188	185	200	209	225	184	212	229	258	264	264	278	278	278	278	278
20	138	152	193	208	204	220	230	248	202	234	253	285	289	289	305	305	305	305	305
21	153	168	213	230	224	242	253	273	219	257	277	312	312	312	322	322	322	322	322
22	167	184	234	252	242	267	288	301	241	284	304	344	344	344	363	363	363	363	363
24	199	219	278	300	287	312	326	352	283	338	358	403	403	403	426	426	426	426	426
25	216	238	302	326	312	338	353	381	328	387	404	436	436	436	458	458	458	458	458
26	234	257	326	352	338	363	392	409	352	416	449	506	506	506	529	529	529	529	529
28	271	298	378	409	363	392	409	442	389	469	469	566	566	566	598	598	598	598	598
32	354	390	494	534	474	512	534	577	428	543	586	612	612	612	646	646	646	646	646
36	448	493	625	675	600	648	676	730	542	687	742	775	775	775	817	817	817	817	817
40	554	609	772	834	741	800	835	902	669	848	916	966	966	966	1009	1009	1009	1009	1009
44	670	737	934	1009	896	967	1010	1090	810	1026	1109	1157	1157	1157	1221	1221	1221	1221	1221
48	797	877	1112	1201	1066	1151	1202	1298	964	1224	1319	1377	1377	1377	1453	1453	1453	1453	1453
52	936	1029	1305	1409	1252	1351	1411	1523	1028	1434	1548	1616	1616	1616	1706	1706	1706	1706	1706

STEEL WIRE ROPES

For The :-

- Offshore Industries
- Marine/Shipping
- Construction
- Piling
- Logging



Stockist & Distributor of Quality Wire Rope

Drilling lines, Sand lines, Winch lines, Towing lines, Pennant lines, Ropes for Crane, Hoist, Marine and Engineering.

The uses of Wire Rope are so numerous and working conditions are so variable that it is important to choose the right type of rope for the duty it has to perform. By varying the construction, the type of Wire Rope can be widely varied, such as, lay, breaking load, galvanized, ungalvanized preformed, non-preformed. We suggest that you call for the advice of our expertises in selecting Wire Rope.

Uses

For Drilling, Shipping, Marine, Logging, Aircraft, Lifting Slings, Fishing, Excavating, Elevator, Mining, Aerial Tramways, Ropeways and Suspension Structures.

Approved By

American Petroleum Institute, Lloyd's Register of Shipping, American Bureau of Shipping, Det Norske Veritas, Bureau Veritas of Shipping, Nippon Kaiji Kyokai, Japanese Industrial Standard.

Rope Recommendations Table

All ropes are right-hand, regular lay (ordinary lay) (unless otherwise stated)

PS	—	Plow Steel,	IPS — Improved Plow Steel
XIP	—	Extra Improved Plow Steel	
Grade	—	British Standard Grade (kg/mm ²)	
IWRC	—	Independent Wire Rope Core (Steel Core)	

Right-hand (Z)
Regular
Lay



Right-hand (Z)
Lang's
Lay



Left-hand (S)
Regular
Lay



Left-hand (S)
Lang's
Lay



Right-hand Regular Lay (Ordinary Lay)



Left-hand Regular Lay (Ordinary Lay)



Right-hand Lang's Lay

FLEXIBILITY AND DURABILITY

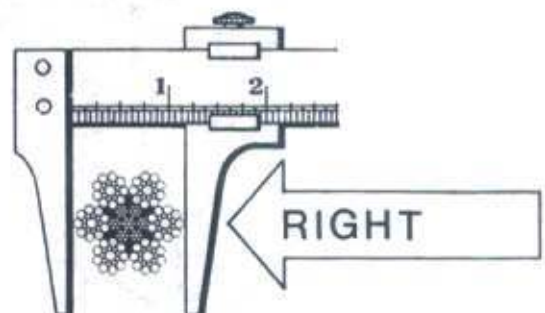
When compared with the ropes of same diameter, the ropes having more wires is more flexible than that having fewer wires, but is worse in durability.

TENSILE STRENGTH, ELASTICITY & DUCTILITY

In order to increase the breaking strength of wire rope, tensile strength of steel wire should be increased. In case the tensile strength of wire be increased higher, the elasticity and ductility tend to become lower. However, excellent techniques can make high tensile wire rope with keeping high elasticity and ductility.

HOW TO MEASURE ROPE SIZE

The size of a wire rope is the diameter of the circle which will just enclose all of the strands. The correct method is to measure over any pair of opposite strands. (See drawings)



What Is A Wire Rope?

A wire rope is much more than a collection of wires—even the finest quality wires. In the centre is the core. It may consist of Fibre, stranded Wire, Synthetic material or a complete "Independent" Wire Rope within a wire rope.

The strand centre is a wire or fibre about which the covering wires are laid. This centre wire is known as the king wire.

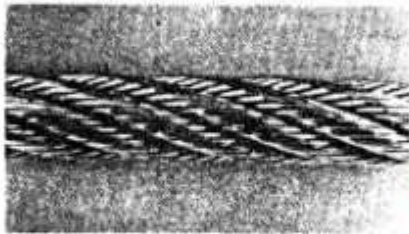
The rope is a number of strands laid helically around the core.

The most common construction consists of 6 strands laid around a fibre core or Independent Wire Rope Core.

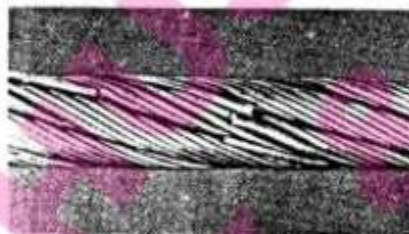
The number and size of wires in a strand, and the number of strands in a rope vary according to the work the rope has to do. Strength, flexibility, abrasion resistance, and other characteristics dictate the rope you ultimately select. The equipment has also to be considered—the type and size of drums and pulleys, the load and the speed at which the rope will be worked. It is sometimes thought that a rope with the highest breaking strength is the best for any job. This is not always the case. For example a rope made from 180 kgf/mm² wire with its superior ductility and flexibility may out-perform and outlast a rope of say 200 or 220 kgf/mm² in the same construction with reduced ductility due to its higher tensile.



Typical Wire Rope Failures



1. Rope which has been worn due to **ABRASION** (Note even wear around the strands)



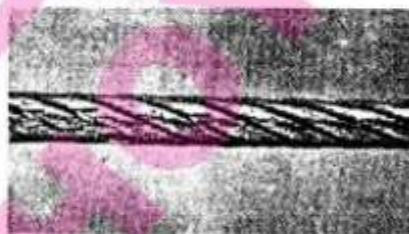
2. Failure from **FATIGUE** after constant working over sheaves of normal size and under moderate load (Note square and "stepped" wire breaks)



3. A rope failing from fatigue after **BENDING OVER SMALL SHEAVES**.



4. "Localised heavy wear. Reduced wire section accelerates fatigue"



5. Wire rope that has provided **MAXIMUM SERVICE** and is ready for replacement.



6. Rope break due to **EXCESSIVE STRAIN**.



7. A rope that has been **TRAPPED** after jumping off a sheave



8. A **BIRD CAGE** which has been forced through a tight sheave. The same type of damage is often caused when a wire rope is mishandled during initial fitting



9. A rope with snagged wires resulting from **DRUM CRUSHING** at cross over point.



10. A **KINK**























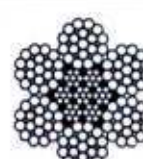









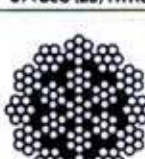




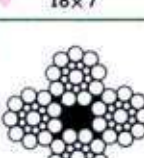


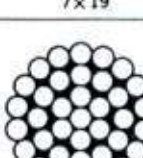



11. A **KINK** after straightening (note misplaced wires and strands). Also localised shortening of its length. This rope is now dangerous.

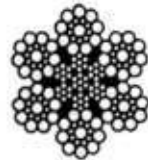


12. Rope strand indicating the result of **SEVERE SURFACE WEAR**

Typical Cross Sections Of Wire Rope & Strand

					
6x7	6x12	6x15	6x19	6x24	6x30
					
6x37	6x61	6xS(19)	6xW(19)	6xFi(25)	6xFi(29)
					
6xFi(25) IWRC	8xS(19)	8xW(19)	8xFi(25)	6xS(17)	6xSew(43)
					
6xWS(31)	6xWS(36)	6xS(19) IWRC	6xFi(21) IWRC	6xFi(25) NIWRC	6xSFi(41) IWRC
					
6xWS(26) IWRC	6xFi(21)	6xSeS(25) IWRC	6xSeS(37)	6xWS(41) IWRC	6xSFi(36)
					
6x(6x7)	18x7	19x7	7x7	7x19	7x37
					
4x7	4xS(19)	1x7	1x19	1x37	3x7

6xS (19) 6xW (19) IWRC



(1+9+9)

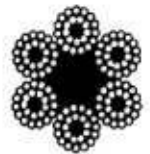


(1+6+6/6W)

For Oil Well Drilling, Crane & Hoist, Mine Service
and General Engineering Purposes

Diameter		Approx. Weight Kg/100m	Minimum Breaking Strength in Kg			
mm	inch		HG 150Kg/mm ²	DG & A 165Kg/mm ²	EG & B 180Kg/mm ²	C 195Kg/mm ²
5	3/16	10.7	1,480	1,630	1,760	1,920
6	1/4	15.5	2,130	2,340	2,530	2,770
7	5/16	21.1	2,890	3,190	3,450	3,770
8	3/8	27.5	3,780	4,160	4,430	4,790
9	7/16	34.8	4,790	5,270	5,600	6,070
10	-	43.0	5,910	6,500	6,920	7,490
11	1/2	53.9	7,410	8,150	8,670	9,400
12	-	61.9	8,510	9,360	9,960	10,800
12.5	1/2	67.2	9,270	10,200	10,800	11,700
14	9/16	84.3	11,600	12,700	13,600	14,700
16	5/8	110	15,100	16,600	17,700	19,200
18	11/16	139	19,200	21,100	22,400	24,300
19	3/4	155	21,400	23,500	25,000	27,100
20	13/16	172	23,600	26,000	27,700	30,000
22	7/8	216	29,600	32,600	34,700	37,600
24	15/16	248	34,000	37,400	39,800	43,100
25	1	269	36,900	40,600	43,200	46,800
28	1 1/8	337	46,300	51,000	54,200	58,700
30	1 1/4	387	53,200	58,500	62,200	67,400
32	1 1/4	440	60,600	66,600	70,800	76,700
35	1 3/8	526	72,500	79,600	84,700	91,600
38	1 1/2	621	85,400	93,900	99,900	108,000
40	1 5/8	688	94,600	104,000	111,000	120,000
42	-	759	104,000	115,000	122,000	132,000
44	1 3/4	832	115,000	126,000	134,000	145,000
46	1 7/8	910	125,000	138,000	146,000	159,000
48	1 7/8	991	136,000	150,000	159,000	173,000
50	1 5/8	1,080	148,000	163,000	173,000	187,000
51	2	1,120	154,000	170,000	180,000	195,000
52	2 1/16	1,160	160,000	176,000	187,000	203,000
56	-	1,350	185,000	204,000	217,000	235,000
58	2 3/16	1,440	199,000	219,000	233,000	253,000
60	2 3/8	1,540	213,000	234,000	249,000	270,000
63	2 1/2	1,700	235,000	258,000	274,000	298,000
71	2 7/8	2,160	298,000	328,000	349,000	378,000

6x24 7FC

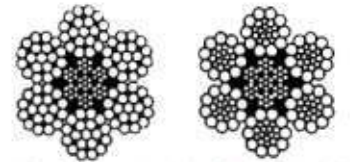


(9+15+FC)

For Cargo Handling Gear, Mooring & Towing Purposes
and for General Use on Board Ships

Diameter		Approx. Weight Kg/100m	Minimum Breaking Strength in Kg		
mm	inch		HG 150Kg/mm ²	DG & A 165Kg/mm ²	EG & B 180Kg/mm ²
8	5/16	21.2	2,970	3,210	3,500
9	3/8	26.9	3,750	4,060	4,430
10	-	33.2	4,640	5,020	5,470
11	7/16	41.6	5,820	6,290	6,860
12	-	47.8	6,680	7,220	7,870
12.5	1/2	51.9	7,250	7,840	8,550
14	9/16	65.1	9,090	9,830	10,700
16	5/8	85.0	11,900	12,800	14,000
18	3/4	108	15,000	16,200	17,700
19	3/4	121	16,700	18,100	19,700
20	7/8	133	18,500	20,100	21,900
22	7/8	167	23,300	25,200	27,500
24	9/8	191	26,700	28,900	31,500
25	1	208	29,000	31,300	34,100
28	1 1/8	260	36,400	39,300	42,900
30	1 3/8	299	41,800	45,100	49,200
32	1 1/4	340	47,500	51,400	56,100
35	1 3/8	407	56,900	61,400	67,000
38	1 1/2	479	67,000	72,400	78,900
40	1 5/8	531	74,200	80,200	87,500
42	-	586	81,800	88,500	96,500
44	1 3/4	643	89,800	97,100	106,000
46	1 5/8	703	98,200	106,000	115,000
48	1 7/8	765	107,000	116,000	126,000
50	1 3/2	830	117,000	125,000	136,000
51	2	864	122,000	130,000	142,000
52	2 1/16	898	125,000	136,000	148,000
56	-	1,040	145,000	157,000	171,000
58	2 5/16	1,120	156,000	169,000	184,000
60	2 3/8	1,200	167,000	180,000	196,000
63	2 1/2	1,320	184,000	199,000	217,000
71	2 5/8	1,670	234,000	253,000	276,000
75	2 3/2	1,870	261,000	281,000	307,000
80	3 1/2	2,130	297,000	321,000	350,000
84	3 1/8	2,340	327,000	352,000	386,000
88	3 5/8	2,570	359,000	388,000	423,000

6xFi (25) 6xWS (26) IWRC



(1 + 6/6F + 12) (1 + 5 + 5/5W + 1C)

For Oil Well Drilling, Crane & Hoist, Mine Service
and General Engineering Purposes

Diameter		Approx. Weight Kg/100m	Minimum Breaking Strength in Kg		
mm	inch		DG & A 165Kg/mm ²	EG & B 180Kg/mm ²	C 195Kg/mm ²
6	¼	15.5	2,300	2,470	2,640
7	⅜	21.1	3,120	3,360	3,600
8	⅝	27.6	4,080	4,390	4,700
9	¾	34.9	5,160	5,560	5,950
10	-	43.1	6,370	6,860	7,340
11	⅞	54.0	7,990	8,610	9,210
12	-	62.0	9,170	9,880	10,600
12.5	½	67.3	9,950	10,700	11,500
14	⅝	84.4	12,500	13,500	14,400
16	⅞	110	16,300	17,600	18,800
18	1 ¼	140	20,600	22,200	23,800
19	¾	156	23,000	24,800	26,500
20	⅞	172	25,500	27,500	29,400
22	⅞	216	32,000	34,400	36,800
24	1 ¼	248	36,700	39,500	42,300
25	1	269	39,800	42,900	45,900
28	1 ⅝	338	49,900	53,800	57,500
30	1 ¾	388	57,300	61,800	66,100
32	1 ¾	441	65,200	70,300	75,200
35	1 ⅞	528	77,500	82,400	90,000
38	1 ½	622	92,000	99,100	106,000
40	1 ⅞	689	101,000	110,000	117,000
42	-	760	112,000	121,000	129,000
44	1 ¾	834	123,000	133,000	142,000
46	1 ⅞	912	135,000	145,000	155,000
48	1 ⅞	993	147,000	158,000	169,000
50	1 ⅞	1,080	159,000	172,000	184,000
51	2	1,120	165,000	179,000	191,000
52	2 ¼	1,170	172,000	186,000	199,000
56	-	1,350	199,000	216,000	230,000
58	2 ⅝	1,450	214,000	231,000	248,000
60	2 ⅝	1,560	229,000	248,000	265,000
63	2 ½	1,710	252,000	273,000	292,000
71	2 ⅞	2,180	320,000	347,000	371,000
75	2 ⅞	2,430	358,000	387,000	414,000
80	3 ⅝	2,760	407,000	440,000	471,000
84	3 ⅞	3,050	447,000	485,000	519,000

6xFi (29)
6xWS (31) IWRC
6xSeS (37)

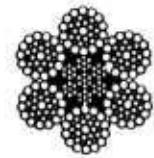


(1 + 7/7F + 14) (1 + 6 + 6/6W + 12) (1 + 6 + 15 + 15)

For Oil Well Drilling, Crane & Hoist, Mine Service
 and General Engineering Purposes

Diameter		Approx. Weight Kg/100m	Minimum Breaking Strength in Kg		
mm	inch		DG & A 165Kg/mm ²	EG & B 180Kg/mm ²	C 195Kg/mm ²
6	¼	15.9	2,280	2,450	2,620
7	⅜	21.6	3,100	3,340	3,570
8	⅜	28.2	4,050	4,360	4,660
9	¾	35.7	5,120	5,520	5,900
10	-	44.1	6,330	6,810	7,290
11	¾	55.3	7,940	8,550	9,140
12	-	63.5	9,110	9,810	10,500
12.5	½	68.9	9,880	10,600	11,400
14	¾	86.4	12,400	13,400	14,300
16	¾	113	16,200	17,400	18,700
18	¾	143	20,500	22,100	23,600
19	¾	159	22,800	24,600	26,300
20	¾	176	25,300	27,300	29,100
22	¾	221	31,700	34,200	36,600
24	¾	254	36,400	39,200	42,000
25	1	276	39,500	42,600	45,500
28	1¼	346	49,600	53,400	57,100
30	1¾	397	56,900	61,300	65,600
32	1¼	451	64,800	69,800	74,600
35	1¾	540	77,500	83,500	89,200
38	1½	637	91,300	98,400	105,000
40	1½	705	101,000	109,000	117,000
42	-	778	112,000	120,000	129,000
44	1¾	853	122,000	132,000	141,000
46	1¾	933	134,000	144,000	154,000
48	1¾	1,020	146,000	157,000	168,000
50	1½	1,100	158,000	170,000	182,000
51	2	1,140	164,000	177,000	189,000
52	2¼	1,190	171,000	184,000	197,000
56	-	1,380	198,000	214,000	229,000
58	2¼	1,480	213,000	229,000	245,000
60	2¼	1,590	228,000	245,000	262,000
63	2½	1,750	251,000	270,000	289,000
71	2¼	2,230	319,000	343,000	367,000
75	2¼	2,480	356,000	383,000	409,000
80	3¼	2,830	405,000	436,000	466,000
84	3¼	3,120	447,000	480,000	514,000

6xWS (36) IWRC



(1+7+7/7W+14)

For Oil Well Drilling, Crane & Hoist, Mine Service
and General Engineering Purposes

Diameter		Approx. Weight Kg/100m	Minimum Breaking Strength in Kg		
mm	inch		DG & A 165Kg/mm ²	EG & B 180Kg/mm ²	C 195Kg/mm ²
6	¼	15.8	2,300	2,500	2,680
7	⅜	21.6	3,120	3,410	3,650
8	½	28.2	4,080	4,450	4,770
9	⅝	35.6	5,160	5,630	6,030
10	¾	44.0	6,380	6,950	7,450
11	⅞	53.2	7,710	8,410	9,010
12	-	63.4	9,180	10,000	10,700
12.5	½	68.8	9,960	10,900	11,600
14	⅝	86.2	12,500	13,600	14,600
16	¾	113	16,300	17,800	19,100
18	⅞	143	20,700	22,500	24,100
19	¾	159	23,000	25,100	26,900
20	⅞	176	25,500	27,800	29,800
22	¾	221	32,000	34,900	37,300
24	⅞	254	36,700	40,100	42,900
25	1	276	39,900	43,500	46,500
28	1⅜	346	50,000	54,500	58,300
30	1⅝	397	57,400	62,600	67,000
32	1¾	451	65,300	71,200	76,200
35	1⅞	540	78,200	85,200	91,200
38	1½	637	92,100	100,000	107,000
40	1⅞	705	102,000	111,000	119,000
42	-	778	112,000	123,000	131,000
44	1¾	853	123,000	135,000	144,000
46	1⅞	933	135,000	147,000	157,000
48	1¾	1,020	147,000	160,000	171,000
50	1⅞	1,100	159,000	174,000	186,000
51	2	1,140	165,000	181,000	194,000
52	2⅜	1,190	172,000	188,000	201,000
56	-	1,380	200,000	218,000	233,000
58	2⅝	1,480	215,000	234,000	250,000
60	2⅞	1,590	230,000	250,000	268,000
63	2½	1,750	253,000	276,000	295,000
71	2⅞	2,220	321,000	-	-
75	2⅞	2,480	359,000	-	-
80	3⅜	2,820	408,000	-	-

6 x 37 FC



(1 + 6 + 12 + 18)

For Mooring, Heavy Derrick Hoist Ropes,
Towing and General Engineering Purposes

Diameter		Approx. Weight Kg/100m	Minimum Breaking Strength in Kg			
mm	inch		HG 150Kg/mm ²	DG & A 165Kg/mm ²	EG & B 180Kg/mm ²	C 195Kg/mm ²
8	5/16	23.0	3,190	3,460	3,690	3,990
9	3/8	29.1	4,040	4,380	4,670	5,040
10	-	35.9	4,990	5,410	5,760	6,220
11	3/8	45.1	6,260	6,790	7,230	7,810
12	-	51.7	7,190	7,790	8,290	8,950
12.5	1/2	56.1	7,800	8,450	9,000	9,720
14	5/16	70.4	9,810	10,600	11,300	12,200
16	5/8	92.0	12,800	13,800	14,700	15,900
18	1/2	116	16,200	17,500	18,700	20,200
19	3/4	131	18,200	19,800	20,500	22,200
20	13/16	144	19,900	21,600	23,000	24,800
22	7/8	180	25,000	27,100	28,900	31,200
24	15/16	207	28,700	31,200	33,200	35,900
25	1	225	31,200	33,800	36,000	38,900
28	1 1/8	282	39,000	42,400	45,200	48,800
30	1 1/8	323	44,800	48,700	51,800	55,900
32	1 1/4	368	51,100	55,400	59,000	63,800
35	1 3/8	440	61,100	66,300	70,600	75,800
38	1 1/2	519	72,100	78,100	83,200	89,400
40	1 5/8	575	79,700	86,600	92,200	99,600
42	-	634	88,000	95,400	102,000	112,000
44	1 3/4	696	96,600	105,000	112,000	120,000
46	1 7/8	760	106,000	114,000	122,000	132,000
48	1 7/8	828	115,000	125,000	133,000	143,000
50	1 5/8	898	125,000	135,000	144,000	156,000
51	2	934	130,000	140,000	150,000	162,000
52	2 1/16	972	135,000	146,000	156,000	168,000
56	-	1,130	156,000	170,000	181,000	195,000
58	2 5/16	1,210	168,000	182,000	194,000	210,000
60	2 3/8	1,290	179,000	195,000	207,000	224,000
63	2 1/2	1,430	198,000	215,000	229,000	247,000
71	2 7/16	1,820	251,000	273,000	291,000	314,000
75	2 3/4	2,020	281,000	304,000	324,000	351,000
80	3 1/8	2,300	319,000	346,000	369,000	399,000
84	3 1/8	2,540	352,000	382,000	406,000	440,000
88	3 3/8	2,780	386,000	419,000	446,000	483,000
95	3 3/4	3,240	450,000	488,000	520,000	563,000
98	3 7/8	3,450	479,000	520,000	553,000	599,000
102	4	3,740	519,000	563,000	599,000	649,000

6x37 IWRC



(1 + 6 + 12 + 18)

For Mooring, Heavy Derrick Hoist Ropes,
Towing and General Engineering Purposes

Diameter		Approx. Weight Kg/100m	Minimum Breaking Strength in Kg			
mm	inch		HG 150Kg/mm ²	DG & A 165Kg/mm ²	EG & B 180Kg/mm ²	C 195Kg/mm ²
8	5/16	25.5	3,590	3,950	4,160	4,490
9	3/8	32.3	4,550	5,000	5,260	5,680
10	-	39.3	5,500	6,050	6,500	7,020
11	7/16	50.0	6,900	7,580	8,150	8,800
12	-	57.3	7,940	8,720	9,370	10,100
12.5	1/2	62.2	8,600	9,450	10,100	10,900
14	9/16	78.1	10,800	11,900	12,800	13,800
16	5/8	100	14,100	15,500	16,600	17,900
18	3/4	129	17,800	19,500	21,000	22,700
19	3/4	145	20,000	22,000	23,700	25,600
20	3/4	160	22,000	24,200	26,000	28,100
22	7/8	200	27,600	30,400	32,600	35,200
24	1 1/8	230	30,400	33,400	35,900	38,800
25	1	250	34,300	37,700	40,500	43,700
28	1 1/8	313	43,200	47,500	51,000	55,100
30	1 3/8	358	49,500	54,500	58,500	63,200
32	1 1/4	400	56,300	61,900	66,600	71,900
35	1 3/8	488	68,000	74,200	79,700	861,000
38	1 1/2	575	79,500	87,300	94,000	101,000
40	1 5/8	640	87,800	96,500	104,000	112,000
42	-	703	96,700	106,000	114,000	123,000
44	1 3/4	772	106,000	117,000	125,000	135,000
46	1 7/8	843	116,000	127,000	137,000	148,000
48	1 7/8	917	127,000	139,000	150,000	161,000
50	1 7/8	995	138,000	151,000	163,000	176,000
51	2	1,040	143,000	157,000	170,000	183,000
52	2 1/16	1,080	149,000	163,000	176,000	190,000
56	-	1,250	172,000	190,000	204,000	220,000
58	2 3/16	1,340	185,000	204,000	219,000	236,000
60	2 3/8	1,430	198,000	218,000	234,000	253,000
63	2 1/2	1,580	218,000	240,000	258,000	279,000
71	2 7/8	2,010	277,000	304,000	327,000	353,000
75	2 7/8	2,240	309,000	340,000	365,000	394,000
80	3 1/2	2,550	352,000	387,000	416,000	449,000
84	3 1/8	2,810	388,000	427,000	459,000	495,000
88	3 1/2	3,090	426,000	468,000	503,000	543,000
95	3 3/4	3,560	496,000	546,000	587,000	633,000
98	3 7/8	3,830	528,000	581,000	624,000	674,000
102	4	4,150	572,000	629,000	676,000	730,000

**17x7
18x7 FC**



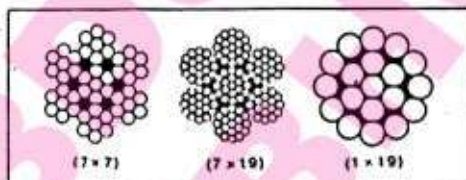
(17x7)



(18x7)

For Crane and General Engineering Purposes

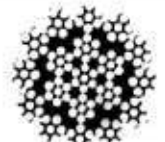
Diameter		Approx. Weight Kg/100m	Minimum Breaking Strength in Kg		
mm	Inch		DG & A 165Kg/mm ²	EG & B 180Kg/mm ²	C 195Kg/mm ²
9	3/8	32.3	4,940	5,380	5,820
10	-	39.8	6,090	6,640	7,190
11	7/16	48.2	7,370	8,040	8,700
12	-	57.4	8,780	9,560	10,400
12.5	1/2	62.3	9,520	10,400	11,200
14	9/16	78.1	11,900	13,000	14,100
16	5/8	102	15,600	17,000	18,400
18	3/4	129	19,700	21,500	23,300
19	3/4	145	22,200	24,200	26,300
20	7/8	159	24,300	26,600	28,800
22	1	200	30,500	33,300	36,100
24	1 1/8	229	35,000	38,200	41,400
25	1	249	38,000	41,500	44,900
28	1 1/4	312	47,700	52,000	56,400
30	1 1/2	358	54,800	59,700	64,700
32	1 1/4	408	62,300	68,000	73,600
35	1 3/8	489	74,600	81,400	88,100
38	1 1/2	575	87,900	95,900	104,000
40	1 5/8	637	97,300	106,000	115,000
42	-	702	107,000	117,000	127,000
44	1 3/4	771	118,000	129,000	139,000
46	1 7/8	842	129,000	140,000	152,000
48	1 7/8	917	140,000	153,000	166,000
50	1 7/8	995	152,000	166,000	180,000



GALVANIZED AIRCRAFT CABLE

Const		7 x 7		7 x 19		1 x 19	
mm	inch	Nominal Breaking Load Kg	Approx. Weight Kg/100m	Nominal Breaking Load Kg	Approx. Weight Kg/100m	Nominal Breaking Load Kg	Approx. Weight Kg/100m
1.59	1/16	-	-	-	-	227	1.26
1.98	1/8	-	-	-	-	363	2.08
2.38	3/16	417	2.38	-	-	544	2.98
2.78	1/4	572	3.27	-	-	726	4.02
3.18	5/16	771	4.17	907	4.32	953	5.21
3.97	3/8	1,179	6.40	1,270	6.70	1,497	8.19
4.76	7/16	1,678	9.23	1,905	9.67	2,132	11.50
5.56	1/2	2,177	12.35	2,540	12.80	2,858	15.20
6.35	5/8	2,767	15.77	3,175	16.40	3,719	20.10
7.14	3/4	3,357	19.94	3,629	20.70	4,672	25.30
7.94	5/8	4,173	24.85	4,445	25.75	5,670	31.30
8.73	7/8	5,080	29.90	5,670	30.80	-	-
9.52	3/4	6,033	35.10	6,532	36.20	-	-

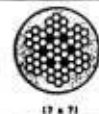
OTHER SIZES AVAILABLE UPON REQUEST.



For Crane and General Engineering Purposes

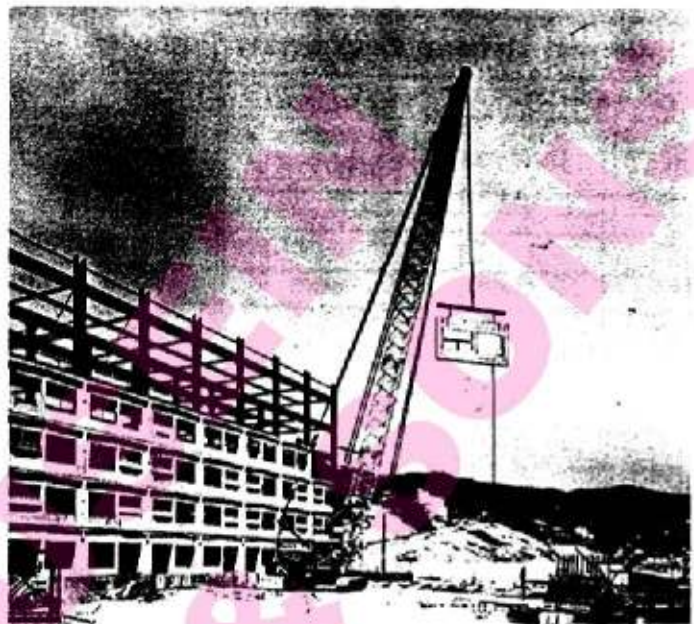
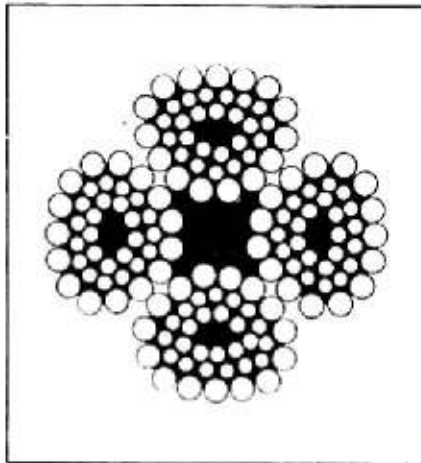
Diameter		Approx. Weight Kg/100m	Minimum Breaking Strength in Kg		
mm	inch		DG & A 165Kg/mm ²	EG & B 180Kg/mm ²	C 195Kg/mm ²
9	3/8	33.9	5,220	5,730	6,200
10	-	41.8	6,450	7,070	7,660
11	3/16	50.6	7,800	8,560	9,260
12	-	60.2	9,280	10,200	11,000
12.5	1/2	65.3	10,100	11,000	12,000
14	5/16	81.9	12,600	13,900	15,000
16	3/8	107	16,500	18,100	19,600
18	1/16	136	20,900	22,800	24,700
19	3/4	153	23,600	25,700	27,900
20	5/16	168	25,900	28,200	30,600
22	3/8	210	32,400	35,400	38,400
24	5/16	241	37,200	40,600	44,000
25	1	262	40,400	44,100	47,800
28	1 1/8	328	50,700	55,300	59,900
30	1 3/16	377	58,200	63,500	68,800
32	1 1/4	429	66,200	72,200	78,200
35	1 3/8	513	79,100	86,400	93,600
38	1 1/2	605	93,300	102,000	110,000
40	1 5/16	670	103,000	113,000	122,000
42	-	739	114,000	124,000	134,000
44	1 3/4	811	125,000	137,000	148,000
46	1 7/16	887	137,000	149,000	161,000
48	1 7/8	965	149,000	162,000	175,000
50	1 29/32	1,050	162,000	176,000	191,000

Galvanized Vinylcoated Cable



Dia		Const		7 x 7		7 x 19	
Bare Cable	Vinyl Thickness	Cable Coated	Cable Weight Kg/100m	Vinyl Weight Kg/100m	Cable Weight Kg/100m	Vinyl Weight Kg/100m	
3/32	1/32	3/32	2.38	0.95	-	-	
3/32	3/64	3/16	2.38	1.60	-	-	
1/8	1/32	3/16	4.17	1.19	4.32	1.19	
1/8	3/64	1/8	4.17	1.96	4.32	1.96	
5/32	1/32	7/32	6.40	1.43	6.70	1.43	
3/16	1/32	1/4	9.23	1.66	9.67	1.66	
3/16	1/16	5/16	9.23	3.80	9.67	3.80	
1/4	1/32	3/16	15.80	2.14	16.40	2.14	
5/16	1/32	3/8	24.85	2.61	25.75	2.61	
3/16	3/64	1 1/32	24.85	4.97	25.75	4.97	
5/16	1/16	7/16	24.85	5.70	25.75	5.70	
3/8	1/32	7/16	35.10	3.09	36.20	3.09	

Uniropo U4 x SeS(39)



Standard Diameter and Breaking Load

Diameter of Rope		Diameter of Outer Wires	Area	Breaking Load in Metric Tons			Approx. Weight Per Meter
mm	Approx. inch	mm	mm ²	S	H	SH	kg/m
8.0	5/16	0.56	28.7	3.83	4.18	4.53	0.261
9.0	3/8	0.63	36.4	4.83	5.28	5.72	0.330
10.0	13/32	0.71	44.9	5.98	6.52	7.06	0.408
11.2	7/16	0.80	56.3	7.50	8.19	8.87	0.512
(12.0)	15/32	0.85	64.7	8.32	9.08	9.84	0.588
12.5	1/2	0.90	70.2	9.35	10.2	11.1	0.638
14.0	9/16	1.00	88.0	11.7	12.8	13.9	0.800
16.0	5/8	1.12	115	15.3	16.7	18.1	1.04
18.0	23/32	1.25	145	19.4	21.2	23.0	1.32
19.0	3/4	1.32	162	21.6	23.6	25.6	1.47
20.0	13/16	1.40	180	23.9	26.1	28.3	1.63
(22.0)		1.57	217	28.9	31.6	34.2	1.97
22.4	7/8	1.60	225	30.0	32.8	35.5	2.05
(24.0)	15/16	1.70	259	33.2	36.3	39.3	2.35
25.0	1	1.80	281	37.3	40.7	44.1	2.55
(26.0)	1 1/32	1.85	303	40.3	44.0	47.6	2.76
28.0	1 1/8	2.00	352	46.9	51.2	55.4	3.24
30.0	1 3/16	2.12	405	53.8	58.7	63.6	3.73
31.5	1 1/4	2.24	445	59.3	64.7	70.1	4.10
33.5	1 5/16	2.36	506	67.1	73.2	79.3	4.64
35.5	1 13/32	2.50	568	75.4	82.2	89.0	5.21
37.5	1 1/2	2.65	634	84.1	91.7	99.3	5.81
40.0	1 9/16	2.80	718	93.8	102	110	6.61
42.5	1 11/16	3.00	811	106	115	125	7.46
45.0	1 3/4	3.15	909	119	129	140	8.37

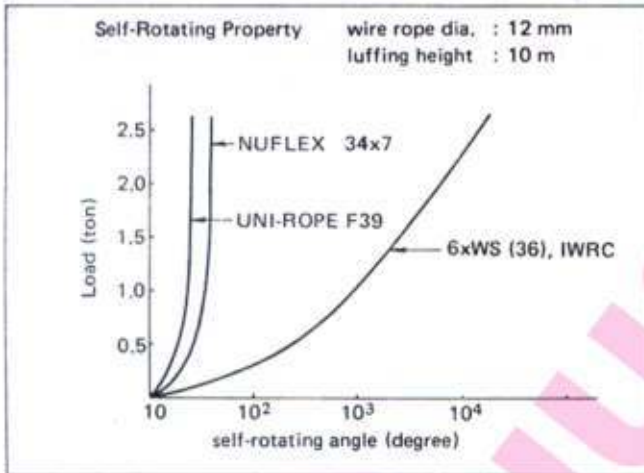
* Rope diameters in () are made to order.

Uni-Rope

Features of Uni-Rope

1. Superior Non-Rotating Property

Does not tangle in multiple parts hoisting mechanism system.



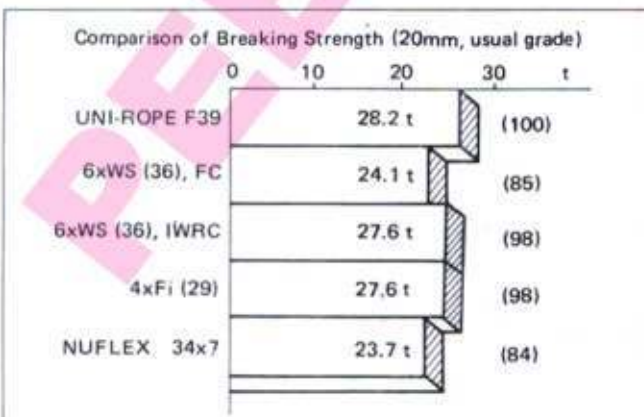
2. Less crushing or abrasion

Finished through a special process, UNI-ROPE withstands abrasion and fits the grooves of drum or sheave with low friction.



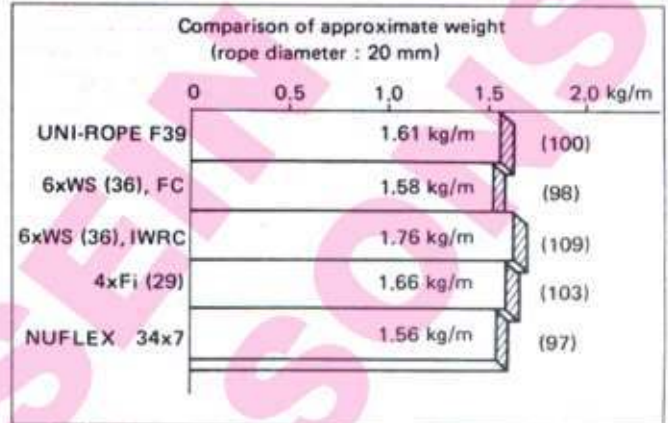
3. Higher Breaking Strength

The breaking strength of UNI-ROPE is higher than that of 6-strand ropes of equivalent diameter; hence the margin of safety is higher.



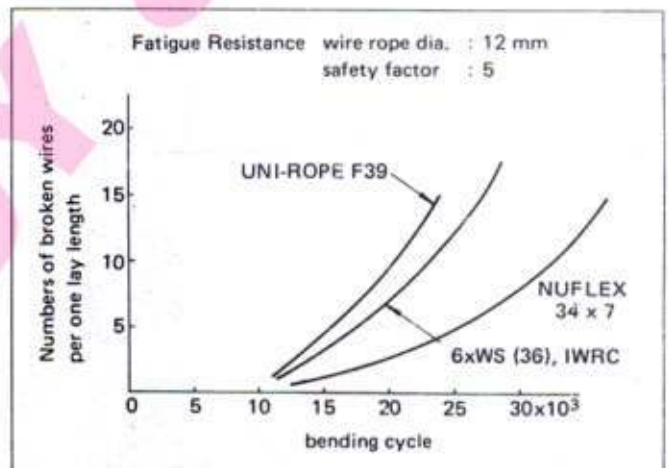
4. Easy Handling

Fiber cores in each strand and fiber rope core decrease the mass of UNI-ROPE; hence it is easy to handle by hands.



5. High resistance to fatigue

The simple construction of UNI-ROPE guarantees the stability of section against crushing loads and enjoys equivalent service life to conventional construction.



Remarks for installation

- (1) If it becomes necessary to cut any portion or ends of UNI-ROPE, proper seizing with wire, or torch fusing should be done.
- (2) In case the wire rope twists or untwists for some reason, please remove the wire rope and install it once more in the proper manner.
- (3) The diameter of the drum or sheave should be more than 20 times that of the wire rope.
- (4) UNI-ROPE is finished through a specially designed forming process after closing. Because of this process, each strand is formed into a triangular shape and the outer surface of UNI-ROPE appears to be abraded. This does not affect the quality or performance in any way.
- (5) An installation manual and other technical information will be provided on your request.

Stainless Steel Wire Rope

- Corrosion Resistant,
- Rust Resistant,
- Heat Resistant.



Construction 7 x 7

Nominal Diameter of Wire Rope		Minimum Breaking Strength				Approximate Weight	
		Grade SB (SUS 304)		Grade SA (SUS 316)			
in.	mm	lbs.	kg	lbs.	kg	lbs./100ft	kg/100m
1/16	1.5	480	170	360	150	0.720	0.952
5/64	2.0	660	290	570	260	1.13	1.68
3/32		920		820		1.59	
7/64	2.5	1,260	460	1,130	400	2.21	2.64
1/8	3.0	1,670	660	1,480	585	2.72	3.79
9/64	3.5	2,020	900	1,800	795	3.58	5.33
5/32		2,600	1,140	2,300	1,040	4.52	6.73
3/16	4.5	3,650	1,480	3,200	1,310	6.36	8.50
	5.0		1,790		1,620		10.5
7/32	5.5	4,890	2,220	4,200	1,910	8.40	12.5
	6.0		2,570		2,330		15.1
1/4	8.0	6,200	4,500	5,300	3,710	11.2	26.9
5/16		9,900		5,620			
3/8	9.0	13,800	6,930	10,900	5,480	25.5	42.1
	10.0						
7/16	12.0	23,100	9,700	18,800	7,890	44.3	82.5
	14.0						
1/2	16.0	37,200	16,900	30,400	13,800	72.5	108
	18.0		21,700		17,700		136
3/4	20.0	52,200	26,000	42,500	21,100	103	168
	22.0						



Construction 7 x 19

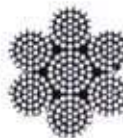
Nominal Diameter of Wire Rope		Minimum Breaking Strength				Approximate Weight	
		Grade SB (SUS 304)		Grade SA (SUS 316)			
in.	mm	lbs.	kg	lbs.	kg	lbs./100ft	kg/100m
3/32	2.5	870	435	770	390	1.59	2.63
7/64		1,190		1,040		565	
1/8	3.0	1,560	835	1,370	745	2.81	5.28
9/64		1,890		1,660		970	
5/32	4.0	2,420	1,090	2,140	970	4.52	8.48
	4.5		1,390		1,250		
3/16	5.0	3,430	1,700	3,100	1,520	6.42	10.5
7/32	5.5	4,600	2,090	4,100	1,860	8.40	12.5
	6.0		2,460		2,190		15.2
1/4	8.0	6,040	4,240	5,420	3,780	11.4	26.9
5/16		9,340		5,450			
3/8	10.0	13,500	6,580	11,600	5,630	25.6	41.9
7/16		17,900		14,700			
1/2	12.0	22,700	9,480	18,700	7,830	44.0	
9/16	14.0	27,700	12,600	22,700	10,300	55.1	82.1
	16.0		16,100		28,200		12,800
5/8	18.0	35,400	20,700	40,700	16,400	103	136
	20.0		24,900		20,200		168
3/4	22.0	50,000	24,900	54,000	25,400	142	212
	24.0						

STAINLESS STEEL WIRE ROPES

6×37 FC



7×37



6×37 IWRC



Dia. of Wire Rope		Minimum Breaking Strength				Approximate Weight		Minimum Breaking Strength				Approximate Weight	
		GradeB(SUS304)		GradeA(SUS316)				GradeB(SUS304)		GradeA(SUS316)			
		Inch	mm	(AISI 304)		(AISI 316)		Lb./Mft.	kg/1000m	(AISI 304)		(AISI 316)	
1/8	3.2	1,370	620	1,150	520	25	37	1,520	690	1,320	600	28	42
9/64	3.5	1,630	740	1,370	620	30	44	1,830	830	1,590	720	34	50
	4.5	2,710	1,230	2,270	1,030	49	73	3,200	1,370	2,600	1,180	56	83
3/16	4.8	3,090	1,400	2,580	1,170	56	83	3,020	1,560	2,980	1,350	63	94
	4.0	2,140	970	1,810	820	38	57	2,380	1,080	2,050	1,930	44	65
	5.0	3,350	1,520	2,580	1,170	60	90	3,730	1,690	3,220	1,460	69	102
7/32	5.5	4,150	1,880	2,480	1,580	74	110	4,610	2,090	3,990	1,810	83	124
	6.0	4,830	2,190	4,040	1,830	87	129	5,380	2,440	4,630	2,100	99	147
1/4	6.3	5,360	2,430	4,540	2,060	97	144	6,020	2,730	5,180	2,350	109	162
9/32	7.0	6,440	2,920	5,510	2,500	118	176	7,210	3,270	6,280	2,850	134	200
5/16	8.0	8,290	3,760	7,190	3,260	155	230	9,220	4,180	8,180	3,710	176	262
	9.0	10,400	4,730	9,110	4,130	196	291	11,500	5,220	10,300	4,650	222	331
3/8	9.5	11,600	5,270	10,200	4,630	219	326	12,900	5,850	11,500	5,220	248	369
	10.0	12,800	5,800	11,200	5,100	241	359	14,200	6,440	12,700	5,740	275	409
7/16	11.0	15,700	7,100	13,800	6,280	292	434	17,400	7,880	15,500	7,020	333	495
	12	18,300	8,300	16,200	7,340	247	517	20,300	9,210	18,100	8,200	395	588
1/2	12.5	19,800	9,000	17,600	7,970	377	561	21,900	9,920	19,600	8,900	429	639
9/16	14.0	24,700	11,200	22,000	9,990	473	704	27,300	12,400	23,200	10,500	539	802
5/8	16.0	32,000	14,500	27,600	12,500	618	920	35,500	16,100	29,100	13,200	704	1,047
	18.0	40,400	18,300	34,400	15,600	780	1,160	44,500	20,200	36,600	16,600	890	1,325
1/4	19.0	45,000	20,400	38,400	17,400	870	1,295	49,600	22,500	40,800	18,500	992	1,476
	20.0	49,400	22,400	42,100	19,100	965	1,438	54,700	24,800	45,200	20,500	1,102	1,640
7/8	22	58,400	26,500	45,200	20,500	1,169	1,740	64,600	29,300	53,800	24,400	1,331	1,980
	24	69,700	31,600	59,500	27,000	1,391	2,070	75,000	34,000	63,900	29,000	1,586	2,360
	25	75,600	34,300	63,900	29,000	1,505	2,240	81,600	37,000	69,500	31,500	1,720	2,560

6×S(19) FC



6×W(19) FC



JIS No.12 6×Fi(25) FC



6×S(19) IWRC



6×W(19) IWRC



JIS No.14 6×Fi(25)



Dia. of Wire Rope		Minimum Breaking Strength				Approximate Weight		Minimum Breaking Strength				Approximate Weight	
		GradeB(SUS304)		GradeA(SUS316)				GradeB(SUS304)		GradeA(SUS316)			
		Inch	mm	(AISI 304)		(AISI 316)		Lb./Mft.	kg/1000m	(AISI 304)		(AISI 316)	
5/32	4.0	2,230	1,010	1,960	890	137	62	2,560	1,160	2,250	1,020	152	69
3/16	5.0	3,480	1,580	3,040	1,380	214	97	3,990	1,810	3,480	1,580	238	171
1/4	6.3	5,620	2,550	4,740	2,150	337	153	6,440	2,920	5,420	2,460	377	171
5/16	8.3	8,530	3,870	7,520	3,410	545	247	9,770	4,430	8,600	3,900	606	275
3/8	9.0	10,800	4,910	9,530	4,320	690	313	12,400	5,620	10,900	4,950	767	348
13/32	10.0	13,300	6,040	11,300	5,130	851	386	15,300	6,920	12,900	5,870	948	430
7/16	11.2	16,300	7,390	13,400	6,080	1,067	484	18,700	8,460	15,300	6,960	1,191	540
15/32	12.0	19,000	8,650	15,700	7,110	1,226	556	21,800	9,900	18,000	8,140	1,365	619
1/2	12.5	20,400	9,250	16,300	7,400	1,330	603	23,400	10,600	18,700	8,470	1,480	672
9/16	14.0	25,600	11,600	20,500	9,290	1,669	757	29,300	13,300	23,400	10,600	1,859	843
5/8	16.0	32,200	14,600	25,800	11,700	2,180	988	36,800	16,700	29,500	13,400	2,430	1,100
3/4	18.0	40,800	18,500	32,200	14,600	2,760	1,250	46,700	21,200	36,800	16,700	3,060	1,390
13/16	20.0	49,800	22,600	40,100	18,200	3,400	1,540	57,100	25,900	45,900	20,800	3,800	1,720
7/8	22.4	60,200	27,300	46,300	21,000	4,300	1,940	69,000	31,300	52,900	24,000	4,760	2,160
15/16	24.0	70,100	31,800	55,100	25,000	4,900	2,220	80,300	36,400	63,000	28,600	5,470	2,480
1	25.0	76,100	34,500	60,000	27,200	5,310	2,410	87,100	39,500	68,600	31,100	5,900	2,690

STAINLESS STEEL WIRE ROPE

Architects and engineers are increasingly aware of the benefits provided by stainless steel – it's good looks well matched to today's high-tech structures, it's long life and low maintenance, it's strength and cleanliness. All factors allowing both the structural and the aesthetic requirements of the design to be realized.

NORSEMAN GIBB specialize in a wide range of stainless steel cables and their associated terminations and tensioners. 316 grade material is used throughout for maximum corrosion resistance.

Cable systems are suitable for applications such as balustrading infill, tension members in roof trusses, catenary wires and safety wires. As a guide 3mm, 4mm, or 5mm diameters are normally selected for balustrading

and 8mm diameter for handrails and safety wires. Tension members may be specified according to the strength and stretch requirements of the application.

Cable and fittings from 2.5mm – 26mm diameter are stocked. Larger sizes are available to order. Where quantities are sufficient coloured plastic covered ropes can be offered.

We are always willing to assist in developing new applications or providing special fittings in addition to the standard range.

The commonest assembly, illustrated below, can be achieved by two alternative systems, the cost effective swage terminal or the convenient swageless system. Any combination of the two can be specified.



SWAGE TERMINATIONS

Must be fitted by a suitable machine. NORSEMAN GIBB can supply made up assemblies to your requirement, thus minimising on-site labour costs. Accurate dimensions for manufacture must be supplied.

SWAGELESS TERMINATIONS

These are hand fitted without the use of special tools. We can supply a package of wire and fittings for you to assemble on site, avoiding costly mistakes due to incorrect dimensions and allowing installation through intermediate stanchions or round corners.

Whether you choose swage or swageless fittings you will need to tension the wire. We offer an extensive range of tensioners for all requirements. A rigging screw is normally selected but in some cases the economical alternative of a threaded stud terminal with a back nut may be suitable.

CHOOSING WIRE

Conventional 1 x 19 strand is the usual choice for balustrading and general purpose suspension applications. It is not flexible.

DYFORM 1 x 19 is a strand with higher strength and much better resistance to stretch than conventional 1 x 19. Please ask for further technical information.

7 x 19 is a flexible wire rope, chosen for applications where the cable must pass round a bend or angle. It has more stretch than 1 x 19.

7 x 7 gives greater strength than 7 x 19 but is more flexible than 1 x 19. 8mm 7 x 7 is selected for personnel safety wires.

WIRE ROPE & STRAND

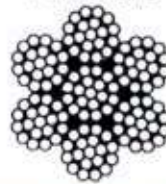
CONVENTIONAL
1 x 19 STRAND



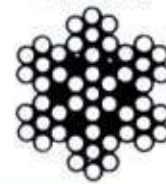
DYFORM
1 x 19 STRAND



7 x 19 ROPE



7 x 7 ROPE



DIA	MASS	MINIMUM BREAKING LOAD	MASS	MINIMUM BREAKING LOAD	MASS	MINIMUM BREAKING LOAD	MASS	MINIMUM BREAKING LOAD
mm*	Kg/100m	Kgf	Kg/100m	Kgf	Kg/100m	Kgf	Kg/100m	Kgf
3.0	4.49	720	-	-	3.34	510	3.40	545
4.0	7.81	1280	-	-	5.94	907	6.05	968
5.0	12.2	2000	13.5	2440	9.29	1420	9.46	1510
6.0	17.6	2880	19.4	3550	13.4	2040	13.6	2180
7.0	23.9	3550	26.0	4910	18.2	2780	18.5	2970
8.0	31.2	4640	34.5	6150	23.8	3630	24.2	3870
10.0	48.8	7250	54.0	9770	37.2	5670	-	-
11.0	59.1	8770	68.0	12100	-	-	-	-
12.0	70.3	10400	80.7	14400	53.5	8160	-	-
14.0	95.7	14180	115	19300	-	-	-	-
16.0	125	18560	147	25600	-	-	-	-
19.0	176	21620	206	32000	-	-	-	-
22.0	236	29070	-	-	-	-	-	-
26.0	330	40600	-	-	-	-	-	-

* INTERMEDIATE INCH SIZES ALSO AVAILABLE