

A close-up photograph of several thick, braided wire ropes. The ropes are dark brown and show a complex, multi-strand braiding pattern. They are draped over a series of grey, curved metal pulleys. The lighting highlights the texture of the rope fibers and the metallic sheen of the pulleys.

MORDEC™ Wire Ropes

MORDEC™ WIRE ROPES

With our extensive market reach and **rigging** unit that conforms to the best practices and highest quality systems, we have successfully serviced the **marine, offshore, engineering, construction, fishing, cranes,** and the **mining industries**.

MEP stocks a **wide range** Steel **Wire Ropes** from **UK, Korea, India, China, Malaysia,** and **Japan** that are manufactured with state of art technology and ISO 9001 certified. Our wire ropes stock in different constructions and range from **6mm to 114mm**. The types are catered for **Marine, Offshore, Multi-strand Crane Ropes “compact & plastic filled”**, and **Mooring & Towing**.



To provide the best possible services together with our range of wire ropes, we offer spooling, splicing, and socketing services as well as testing and examination of wire ropes by **certified wire rope examiners**. Our skilled **riggers** are able to ensure complete wire rope spooling installation and replacement. It is matched with spooling machines which are portable and lightweight with capacity of 10, 25, 50, and up to 120 tons. Rental of spooling machines are also available.



Rigging Equipment Specialists

MEP has the capabilities to **design** and **manufacture wire rope handling equipment** that is packaged with quality workmanship and timely delivery. They can be designed and made-to-order to suit any operational/environmental preferences. Products include High/Mid/Low capacity spooling machines, turntables, hydraulic operated heavy duty drum jacks, vertical & horizontal loose wire coiling machines, double roller electrical high speed coiling machines.

MORDEC Testing and Certification Centre

MORDEC Testing and Certification Centre (MORDEC T&C) was established in Singapore and licensed by MORDEC Innovative Solutions (UK) Co., Ltd (MORDEC UK) to conduct testing and certification of materials handling and lifting gears. It offers a comprehensive program to ensure all gears and slings sent to the centre are tested, inspected and certified accordance to the technology, methodology and procedure commissioned by MORDEC UK. Beside offering the testing and certification, MORDEC T&C is able to produce and assemble all types of rigging and lifting slings, and for mooring, towing, lashing and heavy lift systems and applications using different based materials like wire rope, synthetic material, steel and alloy chain.

MORDEC T&C in Singapore is equipped with the latest state-of-art semi-manufacturing, assembling and testing equipment and facilities. All equipment, load cells and test instruments are calibrated and certified on a yearly basis using ISO 10012:2004 guidelines and requirements by external parties, traceable to international standards institute and monitored by MORDEC UK for compliance. Equally all its engineers and technicians undergo intensive training programs on inspection, examination and certification skills and techniques using MORDEC UK manuals, instructions and methods before they are qualified to conduct the various inspecting and testing functions.



MORDEC™ QUALITY POLICY

MORDEC T&C strives to achieve uncompromising service excellence and enhance products shelf-life and safety. Engineers and technicians who are conducting the inspection and test of lifting gears and components go through a stringent and disciplined process control to ensure compliance to international accepted standards and safety requirements. All certified lifting gears and components are diligently examined and tested in accordance to established safe working load and proof-load requirements.

WIRE ROPES

MORDEC™ SYSTEM

In staying reliance with the marine, offshore, construction and mining industries who are major users of lifting gears and slings, MORDEC T&C inspection and testing technology, methodology and procedure meets the latest safety rules and regulations as ratified by the various institutions, government agencies and classification societies. To achieve it, MORDEC T&C in conjunction with MORDEC UK adopts a proactive and innovative system approach from design elements, components selection and qualification, assembling, inspection and testing method including an effective traceability system. Every step of the way is carefully executed and documented to achieve the highest standard of safety, economy and efficiency. Materials handling, safe lifting and securing techniques for lifting slings and gears trainings are provided to its valued clients as part of MORDEC UK holistic system approach.



MORDEC™ PRODUCTS AND SERVICES

- Wire Rope Lifting, Mooring, Towing Systems
- Inspection, Testing and Certification of rigging gears, slings and ropes
- Spooling Services for winches
- Wire Rope repairs
- Wire Rope systems designing
- Wire rope inspection training and rigging training

MORDEC™ WIRE ROPES



MORDEC WIRE ROPE PERIODIC MAINTENANCE PROGRAM



Traditionally, wire rope inspection has multiple weakness, visual and hand-touch inspection detects only visible and exterior problem and quantitative inspection of wire rope has always been a problem, electromagnetic inspection technology is also hard to adapt due to technical limitation such as weight, poor anti-interference, inaccurate test result.

MEP Systems adopted Mordec wire rope non-destructive technique: WEAK MAGNETIC INSPECTION is the latest known technology in wire rope inspection to detect interior defect such as broken wire, abrasion, corrosion and most importantly material fatigue. Even periodic replacement of wire rope is not reliable, beside huge waste of wire rope, many rope accidents often happen before replacing wire rope. Mordec WEAK MAGNETIC INSPECTION thoroughly reduces hidden-danger but also reduces use cost of wire rope and improves production efficiency.



Mordec Wire Rope Maintenance increases wire rope operation lifespan by cleaning product built up and grit on surface and groove. The system lubricates the entire wire rope both internally and externally. Lubricants are injected into the wire rope with pressurized chamber and thus, remove trapped moisture in the internal strands and replaced with newly applied wire rope coating. During field test, it has been proven wire rope life span extended by 75% using the technique adopted by Mordec.

Mordec Wire Rope pressurised lubrication system is approved by United States Coast Guard, US NAVY, U.S. Army, U.S. Army Corps of Engineers, NATO, Canadian Coast Guard, Canadian Navy, Australian Navy.

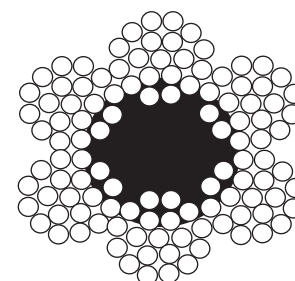
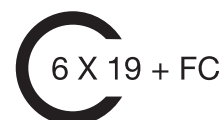


MORDEC™ WIRE ROPES

6 X 19 + FC Steel Wire Ropes

Features:

- ◆ Designed for Crane, Hoist, Construction and General Engineering application
- ◆ Most economical design for applications requiring large diameters
- ◆ Strong resistance to abrasion
- ◆ Fiber Core
- ◆ 6 strands with 19 wires per strand configuration



Meets requirements of BS 302

Diameter of Rope(mm)	Minimum Breaking Load						Approx. Weight per meter(kg/m)
	A & BG(165kg/mm²) kN Tonnef		B & CG(180kg/mm²) kN Tonnef		C(200kg/mm²) kN Tonnef		
8	34.5	3.52	36.8	3.75	40.80	4.16	0.233
9	43.7	4.46	46.5	4.74	51.7	5.27	0.295
9.5	48.6	4.96	51.8	5.28	57.6	5.87	0.328
10	53.9	5.50	57.5	5.86	63.7	5.50	0.364
11.2	67.7	6.90	72.1	7.35	79.9	8.15	0.457
12	77.6	7.91	83.8	8.44	91.7	9.35	0.524
12.5	84.2	8.59	89.7	9.15	99.5	10.20	0.569
14	105.9	10.80	112.8	11.50	125.5	12.80	0.713
16	138.3	14.10	147.1	15.00	163.8	16.70	0.932
18	174.6	17.80	186.3	19.00	205.9	21.00	1.180
19.1	196.1	20.00	209.9	21.40	232.4	23.70	1.330
20	215.7	22.00	229.5	23.40	255.0	26.00	1.460
22.4	270.7	27.60	288.3	29.40	319.7	32.60	1.830
24	310.9	31.70	330.5	33.70	367.7	37.50	2.100
25	337.3	34.40	358.9	36.60	399.1	40.70	2.280
26	364.8	37.20	388.3	39.60	431.5	44.00	2.460
28	422.7	43.10	450.1	45.90	499.2	50.90	2.850
30	485.4	49.50	516.8	52.70	573.7	58.50	3.280
31.5	535.4	54.60	569.8	58.10	632.5	64.50	3.610
33.5	605.1	61.70	644.3	65.70	714.9	72.90	4.080
35.5	679.6	69.30	723.7	73.80	803.2	81.90	4.590
36	699.2	71.30	744.3	75.90	826.7	84.30	4.720
37.5	758.1	77.30	808.1	82.40	896.3	91.40	5.120
38	778.6	79.40	829.6	84.60	919.9	93.80	5.260
40	863.0	88.00	918.9	93.70	1,019.9	104.00	5.820
42	951.2	97.00	1,010.1	103.00	1,118.0	114.00	6.420
42.5	973.8	99.30	1,039.5	106.00	1,147.4	117.00	6.570
44	1039.5	106.00	1,108.2	113.00	1,225.8	125.00	7.050
45	1088.5	111.00	1,167.0	119.00	1,284.7	131.00	7.370
46	1137.6	116.00	1,216.0	124.00	1,343.5	137.00	7.700
47.5	1216.0	124.00	1,294.5	132.00	1,441.6	147.00	8.210
50	1353.3	138.00	1,431.8	146.00	1,598.5	163.00	9.100
53	1515.1	154.50	1,608.3	164.00	1,794.6	183.00	10.220
56	1691.6	172.50	1,794.6	183.00	2,000.6	204.00	11.420
60	1941.7	198.00	2,059.4	210.00	2,301.6	234.70	13.100
63	2140.8	218.30	2,275.1	232.00	2,538.0	258.80	14.450

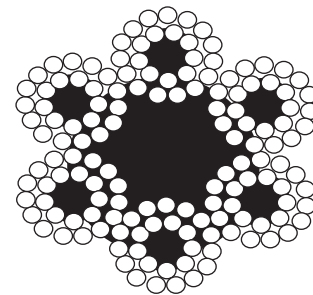
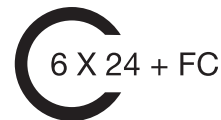
WIRE ROPES

MORDEC™ WIRE ROPES

6 X 24 + FC Steel Wire Ropes

Features:

- ◆ Designed for Marine and Engineering application
- ◆ Strong resistance to abrasion
- ◆ Fiber Core
- ◆ 6 strands with 24 wires per strand configuration



Meets requirements of BS 302

Diameter of Rope mm	Minimum Breaking Load				Approx. Weight per meter kg/m
	A & BG 165kg/mm² kN Tonnef		B & CG 180kg/mm² kN Tonnef		
8	31.5	3.21	34.3	3.50	0.212
9	39.8	4.06	43.4	4.43	0.269
9.5	44.4	4.53	48.4	4.49	0.290
10	49.2	5.02	53.6	5.47	0.332
11.2	61.7	6.29	67.3	6.86	0.416
12	70.8	7.22	77.2	7.87	0.478
12.5	76.9	7.84	83.8	8.55	0.519
14	96.4	9.83	105.0	10.70	0.651
16	125.5	12.80	137.3	14.00	0.850
18	158.9	16.20	173.6	17.70	1.080
19.1	180.4	18.40	197.1	20.10	1.210
20	197.1	20.10	214.8	21.90	1.330
22.4	247.1	25.20	269.7	27.50	1.670
24	283.4	28.90	308.9	31.50	1.910
25	306.9	31.30	334.4	34.10	2.080
26	332.4	33.90	362.8	37.00	2.240
28	385.4	39.30	419.7	42.80	2.600
30	442.3	45.10	482.5	49.20	2.990
31.5	488.4	49.80	532.5	54.30	3.290
33.5	552.1	56.30	602.1	61.40	3.730
35.5	619.8	63.20	675.7	68.90	4.180
37.5	691.4	70.50	754.1	76.90	4.670
38	710.0	72.40	773.7	78.90	4.790
40	786.5	80.20	857.1	87.40	5.310
42.5	888.5	90.60	968.9	98.80	6.000
44	952.2	97.10	1,029.7	105.00	6.430
45	1,000.3	102.00	1,157.2	118.00	6.720
47.5	1,108.2	113.00	1,206.2	123.00	7.490
47.5	1,225.8	125.00	1,333.7	136.00	8.300
50	1,382.7	141.00	1,510.2	154.00	9.330
53	1,539.6	157.00	1,676.9	171.00	10.400
56	1,657.3	169.00	1,804.4	184.00	11.200
58	1,765.2	180.00	1,922.1	196.00	12.000
60	1,951.5	199.00	2,128.0	217.00	13.200

MORDEC™ WIRE ROPES

6 X 37 + FC Steel Wire Ropes

Features:

- ◆ Designed for Crane, Hoist, Construction and General Engineering application
- ◆ Strong resistance to abrasion
- ◆ Fiber Core
- ◆ 6 strands with 37 wires per strand configuration

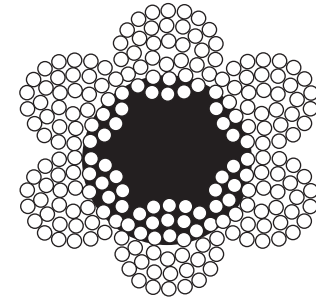


6 x 29 Fi IWRC
WS IWRC

6 x 36 WS IWRC

6 x 41

Weight			IPS		EIPS		EEPS	
Dia (Inch)	Dia (mm)	Approx Kg/m	MBL Ton	SWL (5:1) Ton	MBL Ton	SWL (5:1) Ton	MBL Ton	SWL (5:1) Ton
-	8.00	0.28	4.15	0.83	4.41	0.83	4.90	0.98
-	10.00	0.44	6.48	1.30	6.89	1.38	7.67	1.53
-	11.00	0.55	8.13	1.63	8.64	1.73	9.62	1.92
-	12.00	0.63	9.33	1.87	9.92	1.98	11.00	2.20
1/2	13.00	0.68	10.40	2.08	12.10	2.42	13.20	2.64
-	14.00	0.86	12.70	2.54	13.50	2.70	15.00	3.00
9/16	14.50	0.88	13.20	2.64	15.20	3.04	16.80	3.36
5/8	16.00	1.07	16.60	3.32	18.70	3.74	19.60	3.92
-	18.00	1.43	21.00	4.20	22.30	4.46	24.90	4.98
3/4	19.00	1.55	23.20	4.64	26.70	5.34	29.40	5.88
-	20.00	1.76	25.90	5.18	27.60	5.52	30.70	6.14
7/8	22.00	2.13	31.40	6.28	36.10	7.22	37.10	7.42
-	24.00	2.53	37.30	7.46	39.90	7.98	44.20	8.84
-	25.00	2.75	40.50	8.10	43.10	8.62	47.90	9.58
1	26.00	2.75	40.70	8.14	46.90	9.38	51.60	10.32
-	28.00	3.45	50.80	10.16	54.40	10.88	60.10	12.02
1-1/8	29.00	3.48	51.30	10.26	59.10	11.82	64.90	12.98
-	30.00	3.96	58.30	11.66	62.40	12.48	69.00	13.80
1-1/4	32.00	4.37	63.00	12.60	72.50	14.50	79.80	15.96
-	34.00	4.94	72.80	14.56	80.00	16.00	86.10	17.22
1-3/8	35.00	5.21	75.70	15.14	87.10	17.42	96.20	19.24
-	36.00	5.50	80.00	16.00	89.90	17.98	102.00	20.40
1-1/2	38.00	6.19	89.70	17.94	103.00	20.60	113.00	22.60
-	40.00	7.04	104.00	20.80	110.00	22.00	123.00	24.60
1-5/8	42.00	7.26	104.00	20.80	120.00	24.00	132.00	26.40
-	44.00	8.52	125.00	25.00	133.00	26.60	148.00	29.60
1-3/4	45.00	8.44	121.00	24.20	139.00	27.80	153.00	30.60
-	46.00	9.31	137.00	27.40	146.00	29.20	162.00	32.40
1-7/8	48.00	9.67	138.00	27.60	158.00	31.60	174.00	34.80
-	50.00	11.00	152.00	30.40	172.00	34.40	192.00	38.40
2	52.00	11.90	156.00	31.20	180.00	36.00	197.00	39.40
-	53.00	12.40	168.00	33.60	194.00	38.80	215.00	43.00
2-1/8	54.00	12.80	174.00	34.80	200.00	40.00	221.00	44.20
-	56.00	13.80	185.00	37.00	216.00	43.20	241.00	48.20
-	57.00	14.20	190.00	38.00	224.00	44.80	245.00	49.00
2-1/4	58.00	14.80	195.00	39.00	224.00	44.80	247.00	49.40
2-1/8	60.00	15.80	217.00	43.40	249.00	49.80	274.00	54.80
-	63.00	17.20	220.00	44.00	273.00	54.60	30.00	6.00
2-1/2	64.00	17.50	238.00	47.60	274.00	54.80	301.00	60.20
-	65.00	18.60	256.00	51.20	291.00	58.20	324.00	64.80
2-5/8	67.00	19.10	261.00	52.20	299.00	59.80	330.00	66.00
2-3/8	71.00	21.60	285.00	57.00	333.00	66.60	360.00	72.00
2-7/8	74.00	22.90	309.00	61.80	361.00	72.20	392.00	78.40
3	77.00	25.40	336.00	67.20	389.00	77.80	425.00	85.00
3-1/8	80.00	26.80	362.00	72.40	417.00	83.40	458.00	91.60
3-1/4	83.00	29.00	389.00	77.80	447.00	89.40	493.00	98.60
3-3/8	87.00	31.30	416.00	83.20	487.00	97.40	528.00	105.60
3-1/2	90.00	33.80	445.00	89.00	519.00	103.80	563.00	112.60
3-3/4	96.00	38.70	505.00	101.00	585.00	117.00	640.00	128.00
4	103.00	44.00	569.00	113.80	665.00	133.00	720.00	144.00



WIRE ROPES

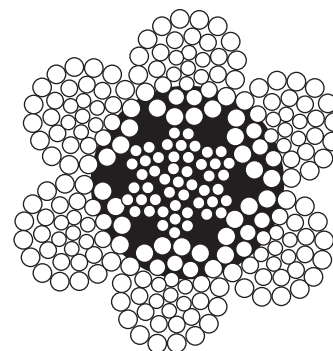
MORDEC™ WIRE ROPES

6 X 37 + IWRC Steel Wire Ropes

Features:

- ◆ Designed for Crane, Hoist, Construction and General Engineering application
- ◆ Strong resistance to abrasion
- ◆ Independent wire rope core
- ◆ 6 strand with 37 wires per strand configuration

6 X 37 + IWRC



Meets requirements of BS 302

Nominal Diameter		Approx. Mass		Improved Plow Steel			Nominal Strength					
							Extra Improved Plow Steel			Extra Extra Improved Plow Steel		
in.	mm	lb/ft	kg/m	lb	kN	Metric Tonners	lb	kN	Metric Tonners	lb	kN	Metric Tonners
1/2	13	0.46	0.68	23,000	102	10.4	26,600	118	12.1	29,200	130	13.2
9/16	14.5	0.59	0.88	29,000	129	13.2	33,600	149	15.2	37,000	165	16.8
5/8	16	0.72	1.07	35,800	159	16.2	41,200	183	18.7	45,400	202	20.6
3/4	19	1.04	1.55	51,200	228	23.2	58,800	262	26.7	64,800	288	29.4
7/8	22	1.42	2.11	69,200	308	31.4	79,600	354	36.1	87,600	389	39.7
1	26	1.85	2.75	89,800	399	40.7	103,400	460	46.9	113,800	506	51.6
1 1/8	29	2.34	3.48	113,000	503	51.3	130,000	578	59.1	143,000	636	64.9
1 1/4	32	2.89	4.30	138,800	617	63.0	159,800	711	72.5	175,800	782	79.8
1 3/8	35	3.50	5.21	167,000	743	75.7	192,000	854	87.1	212,000	943	96.2
1 1/2	38	4.16	6.19	197,800	880	89.7	228,000	1010	103	250,000	1112	113
1 5/8	42	4.88	7.26	230,000	1020	104	264,000	1170	120	292,000	1300	132
1 3/4	45	5.67	8.44	266,000	1180	121	306,000	1360	139	338,000	1500	153
1 7/8	48	6.50	9.67	304,000	1350	138	348,000	1550	158	384,000	1710	174
2	52	7.39	11.0	344,000	1530	156	396,000	1760	180	434,000	1930	197
2 1/8	54	8.35	12.4	384,000	1710	174	442,000	1970	200	488,000	2170	221
2 1/4	58	9.36	13.9	430,000	1910	195	494,000	2200	224	544,000	2420	247
2 3/8	60	10.4	15.5	478,000	2130	217	548,000	2440	249	604,000	2690	274
2 1/2	64	11.6	17.3	524,000	2330	238	604,000	2690	274	664,000	2950	301
2 5/8	67	12.8	19.0	576,000	2560	261	658,000	2930	299	728,000	3240	330
2 3/4	71	14.0	20.8	628,000	2790	285	736,000	3270	333	794,000	3530	360
2 7/8	74	15.3	22.8	682,000	3030	309	796,000	3540	361	864,000	3840	392
3	77	16.6	24.7	740,000	3290	336	856,000	3810	389	936,000	4160	425
3 1/8	80	18.0	26.8	798,000	3550	362	920,000	4090	417	1,010,000	4490	458
3 1/4	83	19.5	29.0	858,000	3820	389	984,000	4380	447	1,086,000	4830	493
3 3/8	87	21.0	31.3	918,000	4080	416	1,074,000	4780	487	1,164,000	5180	528
3 1/2	90	22.7	33.8	982,000	4370	445	1,144,000	5090	519	1,242,000	5520	563
3 3/4	96	26.0	38.7	1,114,000	4960	505	1,290,000	5740	585	1,410,000	6270	640
4	103	29.6	44.0	1,254,000	5580	569	1,466,000	6520	665	1,586,000	7050	720

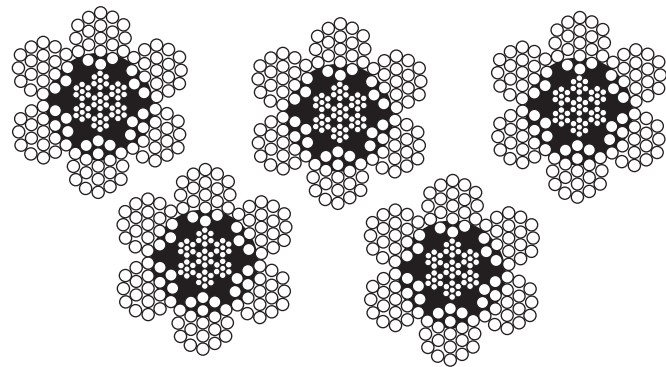
MORDEC™ WIRE ROPES

6 X S(19), FI(25), WS(26) + IWRC Steel Wire Ropes

Features:

- ◆ Designed for Crane, Hoist, Construction and General Engineering application
- ◆ Strong resistance to abrasion
- ◆ Independent wire rope core
- ◆ 6S Strand with 19,25,26 wires per strand

6 X S(19), FI(25), WS(26) + IWRC



WIRE ROPES

Meets requirements of BS 302

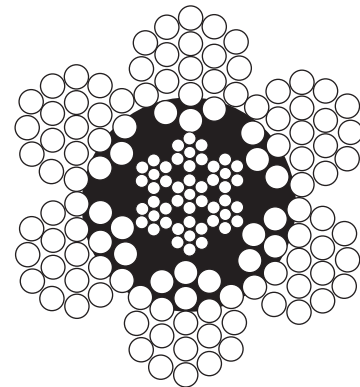
Nominal Diameter		Approx. Mass		Improved Plow Steel			Nominal Strength					
							Extra Improved Plow Steel			Extra Extra Improved Plow Steel		
in.	mm	lb/ft	kg/m	lb	kN	Metric Tonners	lb	kN	Metric Tonners	lb	kN	Metric Tonners
1/2	13	0.46	0.68	23,000	102	10.4	26,600	118	12.1	29,200	130	13.2
9/16	14.5	0.59	0.88	29,000	129	13.2	33,600	149	15.2	37,000	165	16.8
5/8	16	0.72	1.07	35,800	159	16.2	41,200	183	18.7	45,400	202	20.6
3/4	19	1.04	1.55	51,200	228	23.2	58,800	262	26.7	64,800	288	29.4
7/8	22	1.42	2.11	69,200	308	31.4	79,600	354	36.1	87,600	389	39.7
1	26	1.85	2.75	89,800	399	40.7	103,400	460	46.9	113,800	506	51.6
1 1/8	29	2.34	3.48	113,000	503	51.3	130,000	578	59.1	143,000	636	64.9
1 1/4	32	2.89	4.30	138,800	617	63.0	159,800	711	72.5	175,800	782	79.8
1 3/8	35	3.50	5.21	167,000	743	75.7	192,000	854	87.1	212,000	943	96.2
1 1/2	38	4.16	6.19	197,800	880	89.7	228,000	1010	103	250,000	1112	113
1 5/8	42	4.88	7.26	230,000	1020	104	264,000	1170	120	292,000	1300	132
1 3/4	45	5.67	8.44	266,000	1180	121	306,000	1360	139	338,000	1500	153
1 7/8	48	6.50	9.67	304,000	1350	138	348,000	1550	158	384,000	1710	174
2	52	7.39	11.0	344,000	1530	156	396,000	1760	180	434,000	1930	197
2 1/8	54	8.35	12.4	384,000	1710	174	442,000	1970	200	488,000	2170	221
2 1/4	58	9.36	13.9	430,000	1910	195	494,000	2200	224	544,000	2420	247
2 3/8	60	10.4	15.5	478,000	2130	217	548,000	2440	249	604,000	2690	274
2 1/2	64	11.6	17.3	524,000	2330	238	604,000	2690	274	664,000	2950	301
2 5/8	67	12.8	19.0	576,000	2560	261	658,000	2930	299	728,000	3240	330
2 3/4	71	14.0	20.8	628,000	2790	285	736,000	3270	333	794,000	3530	360
2 7/8	74	15.3	22.8	682,000	3030	309	796,000	3540	361	864,000	3840	392
3	77	16.6	24.7	740,000	3290	336	856,000	3810	389	936,000	4160	425
3 1/8	80	18.0	26.8	798,000	3550	362	920,000	4090	417	1,010,000	4490	458
3 1/4	83	19.5	29.0	858,000	3820	389	984,000	4380	447	1,086,000	4830	493
3 3/8	87	21.0	31.3	918,000	4080	416	1,074,000	4780	487	1,164,000	5180	528
3 1/2	90	22.7	33.8	982,000	4370	445	1,144,000	5090	519	1,242,000	5520	563
3 3/4	96	26.0	38.7	1,114,000	4960	505	1,290,000	5740	585	1,410,000	6270	640
4	103	29.6	44.0	1,254,000	5580	569	1,466,000	6520	665	1,586,000	7050	720

MORDEC™ WIRE ROPES

6 X 19 + IWRC Steel Wire Ropes

Features:

- ◆ Designed for Crane, Hoist, Construction and General Engineering application
- ◆ Strong resistance to abrasion
- ◆ Independent wire rope core
- ◆ 6 strand with 19 wires per strand configuration



Meets requirements of BS 302

Nominal Diameter		Approx. Mass		Improved Plow Steel			Nominal Strength					
							Extra Improved Plow Steel			Extra Extra Improved Plow Steel		
in.	mm	lb/ft	kg/m	lb	kN	Metric Tonners	lb	kN	Metric Tonners	lb	kN	Metric Tonners
1/2	13	0.46	0.68	23,000	102	10.4	26,600	118	12.1	29,200	130	13.2
9/16	14.5	0.59	0.88	29,000	129	13.2	33,600	149	15.2	37,000	165	16.8
5/8	16	0.72	1.07	35,800	159	16.2	41,200	183	18.7	45,400	202	20.6
3/4	19	1.04	1.55	51,200	228	23.2	58,800	262	26.7	64,800	288	29.4
7/8	22	1.42	2.11	69,200	308	31.4	79,600	354	36.1	87,600	389	39.7
1	26	1.85	2.75	89,800	399	40.7	103,400	460	46.9	113,800	506	51.6
1 1/8	29	2.34	3.48	113,000	503	51.3	130,000	578	59.1	143,000	636	64.9
1 1/4	32	2.89	4.30	138,800	617	63.0	159,800	711	72.5	175,800	782	79.8
1 3/8	35	3.50	5.21	167,000	743	75.7	192,000	854	87.1	212,000	943	96.2
1 1/2	38	4.16	6.19	197,800	880	89.7	228,000	1010	103	250,000	1112	113
1 5/8	42	4.88	7.26	230,000	1020	104	264,000	1170	120	292,000	1300	132
1 3/4	45	5.67	8.44	266,000	1180	121	306,000	1360	139	338,000	1500	153
1 7/8	48	6.50	9.67	304,000	1350	138	348,000	1550	158	384,000	1710	174
2	52	7.39	11.0	344,000	1530	156	396,000	1760	180	434,000	1930	197
2 1/8	54	8.35	12.4	384,000	1710	174	442,000	1970	200	488,000	2170	221
2 1/4	58	9.36	13.9	430,000	1910	195	494,000	2200	224	544,000	2420	247
2 3/8	60	10.4	15.5	478,000	2130	217	548,000	2440	249	604,000	2690	274
2 1/2	64	11.6	17.3	524,000	2330	238	604,000	2690	274	664,000	2950	301
2 5/8	67	12.8	19.0	576,000	2560	261	658,000	2930	299	728,000	3240	330
2 3/4	71	14.0	20.8	628,000	2790	285	736,000	3270	333	794,000	3530	360
2 7/8	74	15.3	22.8	682,000	3030	309	796,000	3540	361	864,000	3840	392
3	77	16.6	24.7	740,000	3290	336	856,000	3810	389	936,000	4160	425
3 1/8	80	18.0	26.8	798,000	3550	362	920,000	4090	417	1,010,000	4490	458
3 1/4	83	19.5	29.0	858,000	3820	389	984,000	4380	447	1,086,000	4830	493
3 3/8	87	21.0	31.3	918,000	4080	416	1,074,000	4780	487	1,164,000	5180	528
3 1/2	90	22.7	33.8	982,000	4370	445	1,144,000	5090	519	1,242,000	5520	563
3 3/4	96	26.0	38.7	1,114,000	4960	505	1,290,000	5740	585	1,410,000	6270	640
4	103	29.6	44.0	1,254,000	5580	569	1,466,000	6520	665	1,586,000	7050	720

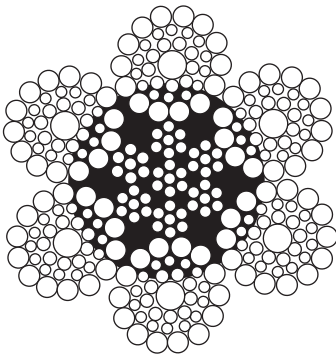
MORDEC™ WIRE ROPES

6 X 36 + IWRC Steel Wire Ropes

Features:

- ◆ Designed for Mooring, Hedry Derrick Hoist Ropes,
- ◆ Towing and General Engineering application Strong resistance to abrasion
- ◆ Independent wire rope core
- ◆ 6 strand with 36 wires per strand configuration

 **Preformed 6 x 36 + IWRC**



WIRE ROPES

Meets requirements of BS 302

Nominal Diameter		Approx. Mass		Improved Plow Steel			Nominal Strength					
							Extra Improved Plow Steel			Extra Extra Improved Plow Steel		
in.	mm	lb/ft	kg/m	lb	kN	Metric Tonners	lb	kN	Metric Tonners	lb	kN	Metric Tonners
1/2	13	0.46	0.68	23,000	102	10.4	26,600	118	12.1	29,200	130	13.2
9/16	14.5	0.59	0.88	29,000	129	13.2	33,600	149	15.2	37,000	165	16.8
5/8	16	0.72	1.07	35,800	159	16.2	41,200	183	18.7	45,400	202	20.6
3/4	19	1.04	1.55	51,200	228	23.2	58,800	262	26.7	64,800	288	29.4
7/8	22	1.42	2.11	69,200	308	31.4	79,600	354	36.1	87,600	389	39.7
1	26	1.85	2.75	89,800	399	40.7	103,400	460	46.9	113,800	506	51.6
1 1/8	29	2.34	3.48	113,000	503	51.3	130,000	578	59.1	143,000	636	64.9
1 1/4	32	2.89	4.30	138,800	617	63.0	159,800	711	72.5	175,800	782	79.8
1 3/8	35	3.50	5.21	167,000	743	75.7	192,000	854	87.1	212,000	943	96.2
1 1/2	38	4.16	6.19	197,800	880	89.7	228,000	1010	103	250,000	1112	113
1 5/8	42	4.88	7.26	230,000	1020	104	264,000	1170	120	292,000	1300	132
1 3/4	45	5.67	8.44	266,000	1180	121	306,000	1360	139	338,000	1500	153
1 7/8	48	6.50	9.67	304,000	1350	138	348,000	1550	158	384,000	1710	174
2	52	7.39	11.0	344,000	1530	156	396,000	1760	180	434,000	1930	197
2 1/8	54	8.35	12.4	384,000	1710	174	442,000	1970	200	488,000	2170	221
2 1/4	58	9.36	13.9	430,000	1910	195	494,000	2200	224	544,000	2420	247
2 3/8	60	10.4	15.5	478,000	2130	217	548,000	2440	249	604,000	2690	274
2 1/2	64	11.6	17.3	524,000	2330	238	604,000	2690	274	664,000	2950	301
2 5/8	67	12.8	19.0	576,000	2560	261	658,000	2930	299	728,000	3240	330
2 3/4	71	14.0	20.8	628,000	2790	285	736,000	3270	333	794,000	3530	360
2 7/8	74	15.3	22.8	682,000	3030	309	796,000	3540	361	864,000	3840	392
3	77	16.6	24.7	740,000	3290	336	856,000	3810	389	936,000	4160	425
3 1/8	80	18.0	26.8	798,000	3550	362	920,000	4090	417	1,010,000	4490	458
3 1/4	83	19.5	29.0	858,000	3820	389	984,000	4380	447	1,086,000	4830	493
3 3/8	87	21.0	31.3	918,000	4080	416	1,074,000	4780	487	1,164,000	5180	528
3 1/2	90	22.7	33.8	982,000	4370	445	1,144,000	5090	519	1,242,000	5520	563
3 3/4	96	26.0	38.7	1,114,000	4960	505	1,290,000	5740	585	1,410,000	6270	640
4	103	29.6	44.0	1,254,000	5580	569	1,466,000	6520	665	1,586,000	7050	720

MORDEC™ WIRE ROPES

(2)19 X 7 Steel Wire Ropes

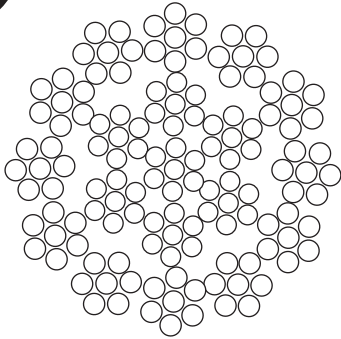
Features:

- ◆ Designed to minimize rotation of ropes when hanging loads
- ◆ Cross lay construction
- ◆ Strands laid in opposite directions



Meets requirements of BS 302

Diameter of Rope mm	180kg/mm ²		Min B/LOAD 200kg/mm ²		220kg/mm ²		Approx. Weight per meter kg/100m
	kN	Tonnef	kN	Tonnef	kN	Tonnef	
7	32.5	3.31	36.0	3.68	39.7	4.0	20.6
8	42.4	4.32	47.10	4.80	51.8	5.3	26.9
9	53.6	5.47	59.6	6.08	65.6	6.7	34.1
10	66.2	6.75	73.5	7.50	80.9	8.3	42.1
12	95.3	9.72	105.9	10.80	116.5	11.9	60.8
14	129.4	13.20	143.8	14.70	158.2	16.1	81.9
16	169.7	17.30	188.5	19.20	207.4	21.1	107.0
18	214.8	21.90	238.6	24.30	262.5	26.8	137.0
20	264.8	27.00	294.2	30.00	323.6	33.0	170.0
22	319.7	32.60	355.2	36.20	390.7	39.8	195.0
24	380.5	38.80	422.8	43.10	465.1	47.4	237.0
26	446.2	45.0	495.8	50.60	545.4	55.6	276.0



4 X SeS(39) + FC Steel Wire Ropes

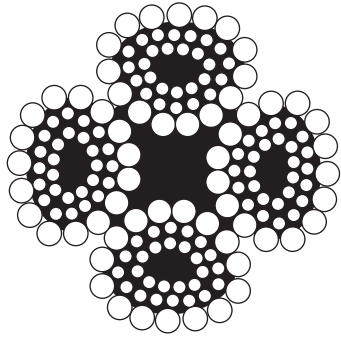
Features:

- ◆ Designed for Crane, Hoist and Piling application
- ◆ Fiber Core
- ◆ 4 strand with 39 wires per strand configuration



Meets requirements of BS 302

Diameter of Rope		Diameter of Outer Wires	Area	Breaking Load in Metric Tons			Aprox. Weight Per Meter
mm	Approx.inch			S	H	SH	
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	23/23	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
(25.0)	11/32	1.85	303	40.3	44.0	47.6	2.76
26.0	1 1/8	2.00	352	46.9	51.2	55.4	3.24
28.0	13/16	2.12	405	53.8	58.7	63.6	3.73
30.0	1 1/4	2.24	445	59.3	64.7	70.1	4.10
31.5	-	2.27	457	-	66.8	72.3	4.12
32	15/16	2.36	506	67.1	73.2	79.3	4.64
33.5	1 13/32	2.50	568	75.4	82.52	89.0	5.21
34	1 1/2	2.65	634	84.1	91.7	99.3	5.81
35.5	19/16	2.80	718	93.8	102	110	6.61
36	1 11/16	3.00	811	106	115	125	7.46
38	1 3/4	3.15	909	119	129	140	8.37



Crane Ropes - Cranemaster® 8P

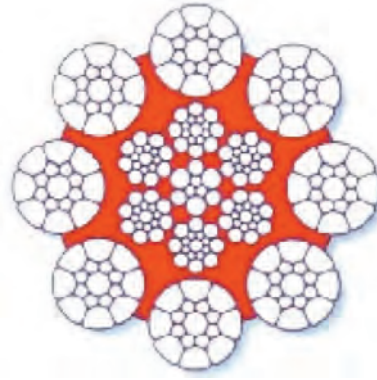
Constructions

8PIxK26SW (10-5+5-5-1)-CWR

- Cranemaster® 8P is a high strength eight strand rope with plastic impregnated core ideal for situations where longer service life is required.
- A sample of rope from each production batch is tested to destruction in order to confirm compliance with catalogue breaking force values.
- High fatigue life resulting from the unique compaction process.
- Maximum resistance to crushing. Recommended for multi layer spooling operations.
- Increased abrasion resistance resulting from the unique compaction process.
- Greater surface contact area resulting from the eight strand construction and compacted finish give longer rope life and reduce sheave wear.
- Fully lubricated in manufacture.
- Plastic impregnation of the steel core. (P signifies full plastic impregnation of the steel core).

APPLICATIONS

- Container Crane main hoist, boom hoist, trolley
- Lattice Boom Crane boom hoist
- Dockside Crane boom hoist
- Offshore Pedestal Crane boom hoist
- Unloader Crane boom hoist, main hoist and Trolley



Nominal Rope Diameter	Approx Diameter	Approx Mass	Minimum Breaking Force			
			Galvanised and Ungalvanised			
			Rope Grade			
			1960 N/mm ²		2160 N/mm ²	
mm	Inch	kg/100m	kN	tonnes	kN	tonnes
8	5/16	29.4	55.2	5.6	58.9	6.0
9		36.9	70	7.1	74.7	7.6
10		45.3	88	9.0	93.4	9.5
11	7/16	55.9	106	10.8	112	11.4
12		65.3	127	13.0	134	13.7
13	1/2	76.6	148	15.1	157	16.0
14		88.8	172	17.5	182	18.6
15		103	197	20.1	210	21.4
16	5/8	116	225	22.9	238	24.3
17		135	255	26.0	271	27.7
18		150	285	29.1	303	30.9
19	3/4	167	318	32.4	337	34.4
20		184	352	35.9	374	38.2
22	7/8	222	426	43.4	452	46.1
24	15/16	265	507	51.7	540	55.1
25		290	550	56.1	584	59.6
26	1	315	595	60.7	633	64.6
28		367	690	70.4	735	75.0
30		425	793	80.9	843	86.0
32	1.1/4	485	900	91.8	958	97.8
34		543	1015	103.0	1080	110.0
36		606	1143	116.0	1217	124.0
38	1.1/2	678	1270	129.0	1354	138.0
40		755	1407	143.0	1501	153.0

WIRE ROPES

Crane Ropes - Cranemaster® 35/35P

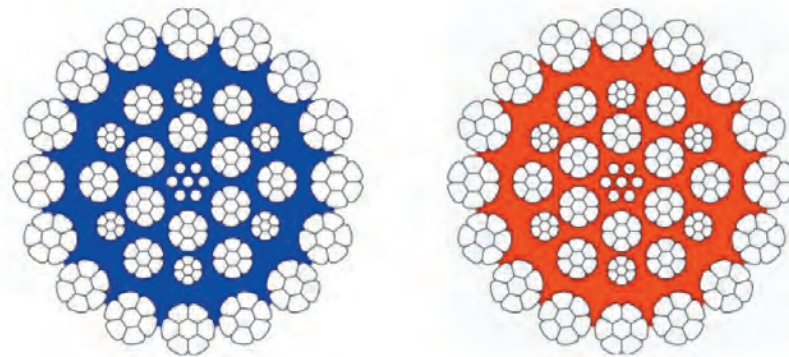
Constructions

35xK7 (16xK7: 6xK7-6xK7-1x7)

- Cranemaster® 35/35P has the highest Strength of all low rotation hoist ropes.
- A sample of rope from each production batch is tested to destruction in order to confirm compliance with catalogue breaking force values.
- Maximum resistance to rotation.
- Suitable for use on single part and multi-part hoist reeving system.
- High fatigue life resulting from the unique compaction process.
- Increased resistance to crushing. Recommended for multi-layer spooling operations.
- Increased abrasion resistance resulting from the unique compaction process.
- Optional plastic impregnation.
- Fully lubricated in manufacture.

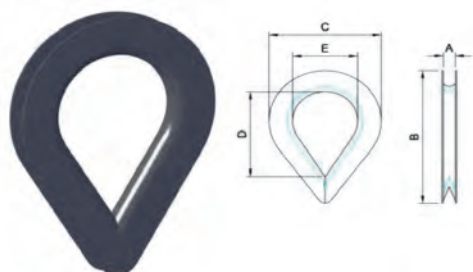
APPLICATIONS

- Mobile Crane main hoist
- Tower Crane main hoist
- Lattice Boom main hoist
- Dockside main hoist
- Offshore Pedestal Crane main and whip hoist



Nominal Rope Diameter	Approx Diameter	Approx Mass	Minimum Breaking Force			
			Galvanised and Ungalvanised			
			Rope Grade			
			1960 N/mm ²		2160 N/mm ²	
mm	Inch	kg/100m	kN	tonnes	kN	tonnes
10		51.4	90.5	9.2	98.6	10.1
11	7/16	61.7	109	11.2	119	12.1
12		72.9	131	13.4	141	14.4
13	1/2	84.6	155	15.8	167	17.0
14		97.1	180	18.4	192	19.6
15		114	206	21.0	221	22.5
16	5/8	130	233	23.8	252	25.7
17		140	261	26.6	285	29.1
18		159	300	30.6	321	32.7
19	3/4	178	331	33.8	358	36.5
20		197	372	37.9	399	40.7
21	13/16	222	402	41.0	434	44.3
22	7/8	240	444	45.3	484	49.4
23		261	482	49.2	528	53.8
24	15/16	286	531	54.2	572	58.3
25		312	575	58.6	623	63.5
26	1	340	621	63.3	661	67.4
27		356	665	67.8	722	73.6
28		391	720	73.4	788	80.4
29	1.1/8	425	769	78.4	833	84.9
30		445	827	84.3	904	92.2
32	1.1/4	505	944	96.3	1035	105.0
34		574	1065	108.0	1156	118.0
35	1.3/8	602	1125	114.0	1216	124.0
36		644	1185	121.0	1286	131.0
38	1.1/2	712	1326	135.0	1437	146.0
40		807	1477	150.0	1588	161.0

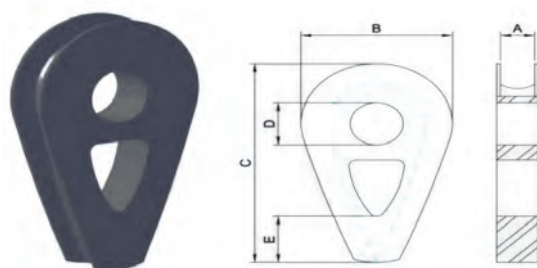
BS 464 Heavy Duty Thimble



Size No.	Rope Dia.	Groove Width	Outside Length	Inside Length	Inside Width
10	8 mm	8 mm	51 mm	35 mm	22 mm
12	10 mm	10 mm	64 mm	47 mm	30 mm
14	12 mm	12 mm	76 mm	57 mm	35 mm
16	14 mm	14 mm	89 mm	65 mm	45 mm
18	16 mm	16 mm	102 mm	76 mm	50 mm
20	18 mm	18 mm	114 mm	86 mm	53 mm
22	20 mm	20 mm	127 mm	94 mm	60 mm
24	22 mm	22 mm	140 mm	107 mm	65 mm
26	24 mm	24 mm	152 mm	114 mm	70 mm
30	28 mm	28 mm	178 mm	130 mm	80 mm
34	32 mm	32 mm	203 mm	157 mm	100 mm
38	36 mm	36 mm	229 mm	177 mm	115 mm
42	40 mm	40 mm	254 mm	198 mm	120 mm
46	44 mm	44 mm	279 mm	214 mm	130 mm
52	50 mm	50 mm	305 mm	235 mm	140 mm

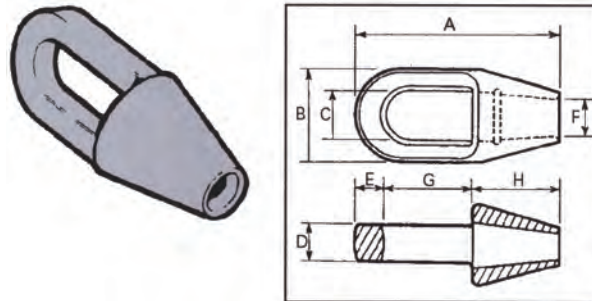
WIRE ROPES

DIN 3091 Solid Thimble



Size No.	Rope Dia.	Groove Width	Outside Width	Overall Length	Pin Hole Dia.
10	8 mm	9 mm	40 mm	66 mm	14 mm
12	10 mm	11 mm	50 mm	82 mm	18 mm
14	12 mm	13 mm	60 mm	98 mm	21 mm
16	14 mm	16 mm	70 mm	114 mm	25 mm
18	16 mm	18 mm	80 mm	130 mm	28 mm
20	18 mm	20 mm	90 mm	145 mm	31 mm
22	20 mm	22 mm	100 mm	161 mm	35 mm
24	22 mm	24 mm	110 mm	177 mm	38 mm
26	24 mm	26 mm	120 mm	193 mm	41 mm
28	26 mm	29 mm	130 mm	209 mm	44 mm
30	28 mm	31 mm	140 mm	224 mm	47 mm
34	32 mm	35 mm	160 mm	256 mm	53 mm
38	36 mm	40 mm	180 mm	288 mm	59 mm
42	40 mm	44 mm	200 mm	320 mm	65 mm
46	44 mm	48 mm	220 mm	352 mm	70 mm
50	48 mm	53 mm	240 mm	384 mm	76 mm
54	52 mm	57 mm	260 mm	416 mm	81 mm

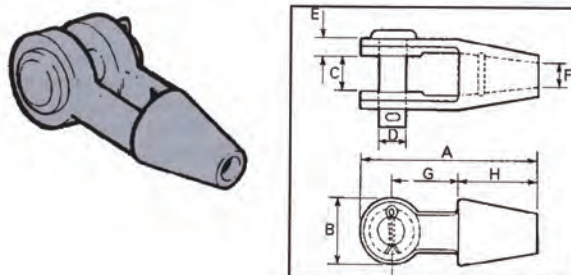
Closed Type Galvanised Steel Spelter Sockets



Rope Dia mm	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	Weight kg
18-19	194	76	41	32	28	22	79	89	2.3
20-22	225	92	48	38	32	25	92	102	3.5
24-26	254	105	57	44	35	29	105	114	5.4
28-29	283	114	64	51	38	32	117	127	7.3
32-35	314	127	70	57	42	38	130	140	10.4
38	359	137	79	64	51	41	156	152	12.7
40-42	391	146	83	70	54	44	171	165	16.3
44-48	445	171	89	76	57	51	200	191	26.3
50-54	502	194	98	83	64	57	225	216	36.3
56-60	549	216	102	92	67	64	241	229	45.6
64-67	597	241	140	102	79	73	270	248	63.6
75-80	686	292	171	133	83	86	298	305	125.5

All dimensions are approximate

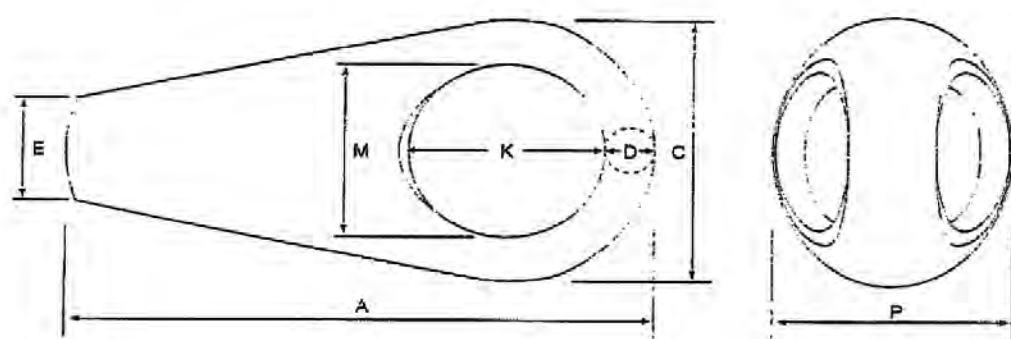
Open Type Galvanised Steel Spelter Sockets



Rope Dia mm	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	Weight kg
18-19	203	67	38	35	16	22	76	89	2.7
20-22	235	79	44	41	19	25	89	102	4.5
24-26	270	95	51	51	22	29	102	114	7.0
28-29	302	105	57	57	25	32	114	127	10.9
32-35	336	121	64	64	29	38	127	140	14.5
38	384	137	76	70	32	41	162	152	20.9
40-42	413	146	76	76	35	44	165	165	25.0
44-48	464	165	89	89	41	51	178	191	38.5
50-54	546	178	102	95	48	57	229	216	56.8
56-60	597	197	114	108	54	64	254	229	74.9
64-67	648	216	127	121	60	73	273	248	113.6
75-80	737	241	146	133	76	86	286	305	172.7

All dimensions are approximate

US Type Mooring Socket



Size No.	Rope Dia.	A	C	D	E	K	M	P
10	31.7 - 34.9	246	122.2	38.1	47.6	82.5	76.2	96.8
12	38.1 - 41.2	304.8	152.4	40.4	57.1	103.1	92.0	122.2
14	44.4 - 47.6	355.6	177.8	47.6	66.6	120.6	111.1	139.7
16	50.8 - 53.9	390.5	201.6	53.9	76.2	133.3	120.6	158.7
18	57.1 - 60.3	438.1	220.6	61.9	80.9	146.0	133.3	184.1
20	63.5 - 66.6	457.2	263.5	68.2	96.8	165.1	149.2	217.4
22	69.8 - 73.0	539.7	273.0	74.6	104.7	177.8	163.5	222.2
24	76.2 - 79.3	584.2	295.2	76.2	114.3	193.6	174.6	242.8
26	82.5 - 85.7	625.4	319.0	82.5	120.6	215.9	193.6	260.3
28	88.9 - 92.0	669.9	339.7	92.0	127.0	228.6	201.6	269.8
30	95.2 - 98.4	698.5	355.6	98.4	133.3	234.9	214.3	290.5
34	101.6 - 107.9	803.2	412.7	111.1	152.4	498.4	241.3	317.5

MORDEC™ WIRE ROPES

2-Legged and 4-Legged Slings Configurations



	Single-leg sling	Two-leg bridle sling		Three and four-leg bridle sling		Endless sling
Angle of lifting	0°	0° to 45°	46° to 60°	0° to 45°	46° to 60°	0°

Rope Dia.	Working Load Limit (Safety Factor 5:1)					
8 mm	0.75 T	1.05 T	0.70 T	1.55 T	1.10 T	1.20 T
9 mm	0.95 T	1.30 T	0.95 T	2.00 T	1.40 T	1.50 T
10 mm	1.15 T	1.60 T	1.15 T	2.40 T	1.70 T	1.85 T
11 mm	1.40 T	2.00 T	1.40 T	3.00 T	2.12 T	2.25 T
12 mm	1.70 T	2.30 T	1.70 T	3.55 T	2.50 T	2.70 T
13 mm	2.00 T	2.80 T	2.00 T	4.15 T	3.00 T	3.15 T
14 mm	2.25 T	3.15 T	2.25 T	4.80 T	3.40 T	3.70 T
16 mm	3.00 T	4.20 T	3.00 T	6.30 T	4.50 T	4.80 T
18 mm	3.70 T	5.20 T	3.70 T	7.80 T	5.65 T	6.00 T
20 mm	4.60 T	6.50 T	4.60 T	9.80 T	6.90 T	7.35 T
22 mm	5.65 T	7.80 T	5.65 T	11.80 T	8.40 T	9.00 T
24 mm	6.70 T	9.40 T	6.70 T	14.00 T	10.00 T	10.60 T
26 mm	7.80 T	11.00 T	7.80 T	16.50 T	11.50 T	12.50 T
28 mm	9.00 T	12.50 T	9.00 T	19.00 T	13.50 T	14.50 T
32 mm	11.80 T	16.50 T	11.80 T	25.00 T	17.50 T	19.00 T
36 mm	15.00 T	21.00 T	15.00 T	31.50 T	22.50 T	23.50 T
40 mm	18.50 T	26.00 T	18.50 T	39.00 T	28.00 T	30.00 T
44 mm	22.50 T	31.50 T	22.50 T	47.00 T	33.50 T	36.00 T
48 mm	26.00 T	37.00 T	26.00 T	55.00 T	40.00 T	42.00 T
52 mm	31.50 T	44.00 T	31.50 T	66.00 T	47.00 T	50.00 T
56 mm	36.00 T	50.00 T	36.00 T	76.00 T	54.00 T	58.00 T

General Guidance On Rope Selection

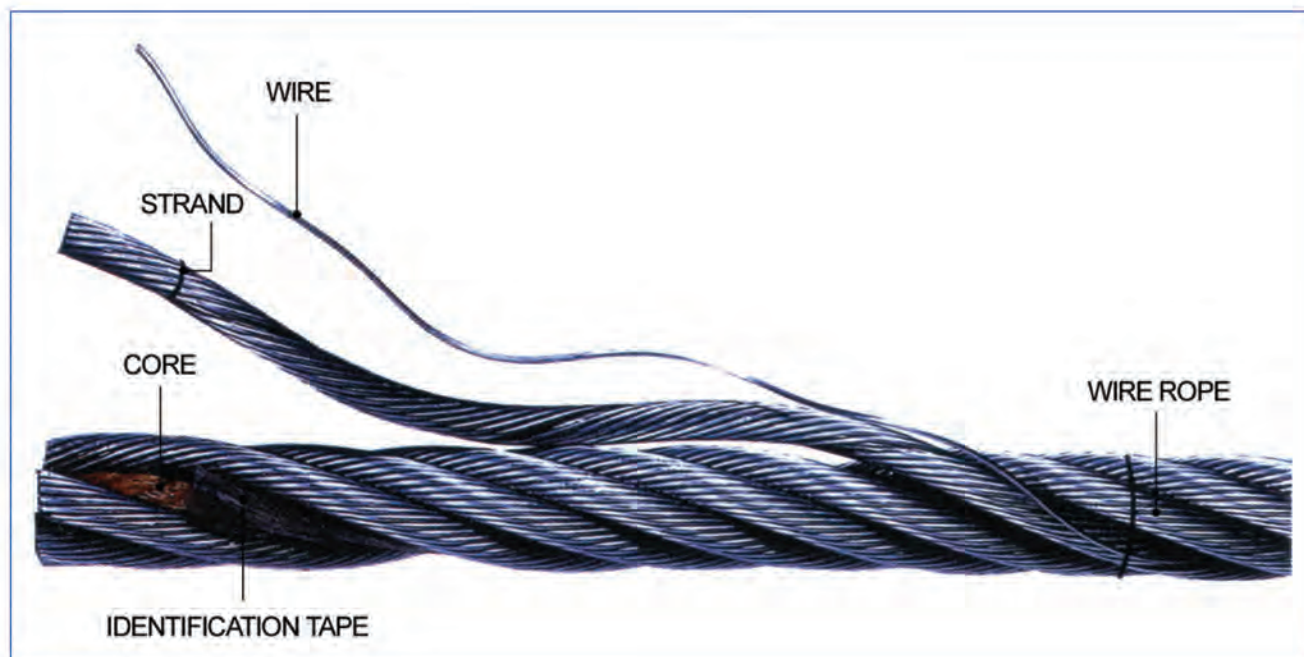
1. Construction of wire rope

The design of a rope is determined by

STRAND CONSTRUCTION : The number and arrangement of wires in each strand

ROPE CONSTRUCTION : The number and arrangement of strands in each rope

THE CORE



WIRE ROPES

2. Grades of rope wire

Steel wires rope are classified into following tensile strength grades to meet various requirements according to the applications.

Grade 135 kg/mm² : Special grade to meet requirement of hoisting ropes on traction elevators.

Grade 150/160 kg/mm² : Galvanized wires coated with zinc through hot dip process for protection against corrosion.

Grade 165kg/mm² : Ungalvanized and drawn galvanized wires for general purpose wire ropes.

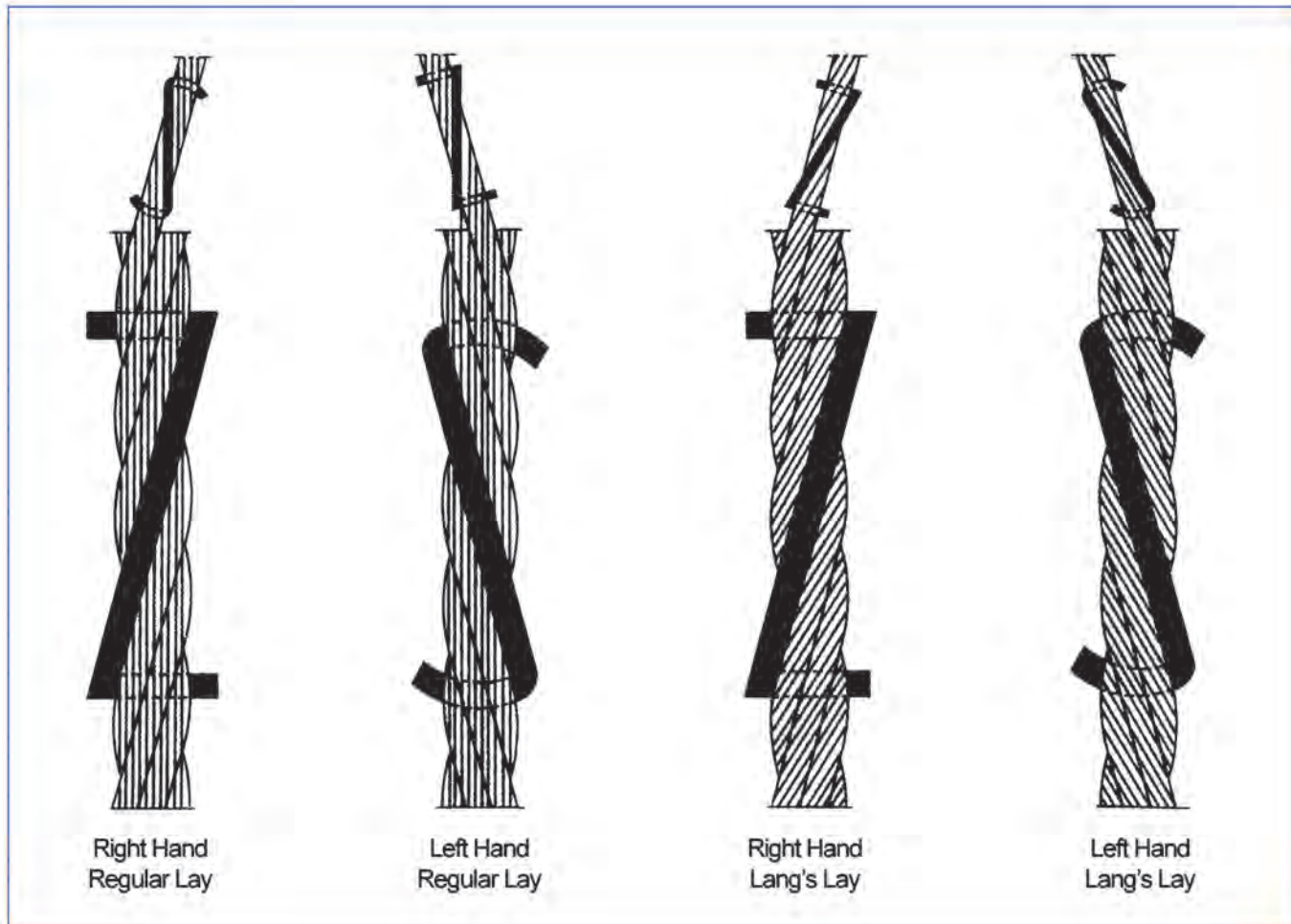
Grade 180kg/mm² : Ungalvanized high tensile grade wires for general purpose wire ropes.

Grade 195kg/mm² : Extra high tensile grade is used in the manufacture of the wire rope where ultimate breaking strength is required.

* Other higher grades are also available.

General Guidance On Rope Selection

3. Wire Rope Lay



4. Cores for wire ropes

Steel

IWRC (Independent Wire Rope Core) The main core is an independent wire rope, normally having the construction 7 x 7. IWSC (Independent Wire Strand Core) The main core is an independent wire strand, normally having the same construction as the outer strands of the rope.

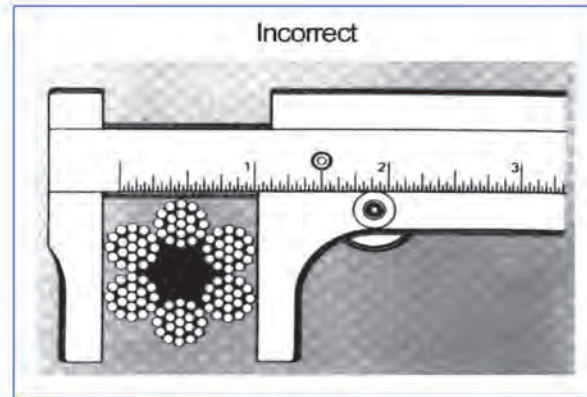
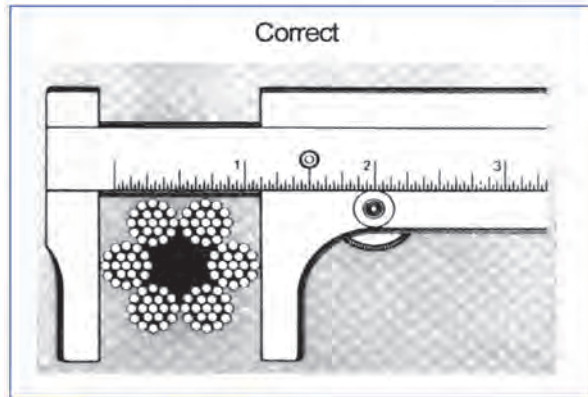
Fibre

Fibre cores are stranded and comprise either; Natural fibres such as sisal hemp, jute, and cotton. Synthetic fibres such as polyamide, polyethylene, and polypropylene Asbestos fibres (heat resistant).

General Guidance On Rope Selection

5. Diameter of wire rope

The diameter of a wire rope is the diameter of the circle which encloses all of the wires. When measuring wire rope it is important to take the greatest distance of the outer limits of the 'Crown' of two opposite strands. A measurement across the valleys will result in incorrect lower readings.



6. Sheave and Drum

When a rope is bent around the sheave or drum, individual wires in the strand are subjected to bending stress and repeated bending fatigue. To obtain a smooth operation and longer life for the wire line, it is necessary to keep the diameter of sheave and drum above the recommended figures of the table and to keep the surface of the grooves sharp and smooth.

Minimum Diameter of Sheave and Drum (D=Wire Rope Dia.)

Construction	Min. Dia.	Recommended Dia.
6 x 7	45 x D	70 x D
6 x 19	30 x D	45 x D
6 x 37	20 x D	30 x D
6 x S(19)	33 x D	50 x D
6 x Fi(25)	26 x D	39 x D
6 x Fi(29)	24 x D	35 x D
8 x S(19)	27 x D	40 x D
18 x 7	35 x D	50 x D

7. Safety factor of wire rope

It is difficult to fix the safety factor for each type of wire rope to be used for various equipments, as this factor depends not only on the load carried, but also on the speed of rope working, the kinds of fitting used for rope ends, the acceleration and deceleration, length of rope, the number, size and arrangements of sheave and drums etc. The following safety factors are minimum requirements for safety and economy in the common installation.

Safety Factor of Wire Rope

Purpose	Min. S.F.
Elevator	10
Crane, Hoist Derrick, Sling	5
Guy or Stay, Horizontal Pull or Traction	4
Main Wire of Aerial Rope Way	3

8. Rope Maintenance

Avoid :

- * Twist, Loop or Kink on wire rope.
- * Moisture, Dust and Acid or Sulphuric Hume gas.
- * Overload.
- * Severe or reverse bending (S-Bending).
- * Too small Sheaves, Drums and Guide Rollers.
- * Hard rolling of Sheaves and Rollers.
- * Worn Groove, Broken or Soft Sheaves and Rollers.
- * No Lubrication.
- * Heat Influence.
- * Wrong Fitting and Spooling on the Drum.
- * Excessive Fleet Angle.
- * Vibration.
- * Obstacles, Sand and Grit on the surface of operation line.
- * Shock-Too fast start or stop.

General Guidance On Rope Selection

9. Lubrication

Lubrication reduces internal friction of the wires and strands and protects against corrosion. Grease is applied to all ropes. If special lubricants are required, this must be specifically stated at time of ordering.

Type of Lubrication		Lubricating Method	Suitable on Wire Rope	Appearance (Type of Grease)	Note
A-2	Closing	No Lubrication	Galv/Ungalv Wire Rope	Yellowish - Brown (Petro-Chem grease)	For general application of Galvanized Wire Rope. Slightly oily to the touch.
	Stranding	Light application Loose wipe			
	Core	Heavier than on Strand No wipe			
A-3	Closing	No Lubrication	Galv/Ungalv Wire Rope	Yelloweish -Brown Petro-Chem grease)	For general application of Ungalvanized Wire rope. Lightly tacky to hand touch.
	Stranding	Applied during stranding by running it through a bath of lubricant Tight wipe			
	Core	Heavy application No wipe			
B	Closing	No Lubrication	Ungalv Wire Rope	Black (Asphaltum grease)	For special usage and long term storage where maximum protection against corrosion.
	Stranding	Applied during stranding by running through a bath of lubricant			
	Core	Heavier than on strand Loose wipe			
C	Closing	No Lubrication	Ungalv Wire Rope	Black (Asphaltum grease)	Lubrication sets up to a medium hard consistency. Ideal for oilfield, construction equipment and logging use. Lightly tacky to hand touch.
	Stranding	Applied during stranding by running it through a bath of lubricant Loose Wipe			
	Core	Heavy application No wipe			
D	Closing	Heavy Application Loose Wipe after the "bath" application	Ungalv Wire Rope	Black (Asphaltum grease)	Wire rope valley is filled with lubrication. For special purpose lubrication of Ungalv Wire rope where maximum protection against corrosion is desired.
	Stranding	Applied during stranding by running it through a bath of lubricant Tight Wipe			
	Core	Heavy application No Wipe			

General Guidance On Rope Selection

10. Pictures of Wire Rope End Terminations



WEDGE SOCKET



LOOP OR THIMBLE SPLICE-HAND TUCKED



CLIPS (NUMBER OF CLIPS VARIES WITH ROPE SIZE AND CONSTRUCTION)



MECHANICAL SPLICE-LOOP OR THIMBLE



WIRE ROPE SOCKET - SWAGED



WIRE ROPE SOCKET - POURED SPELTER OR RESIN

General Guidance On Rope Selection

11. MORDEC™ In-house Test Certificate

 MORDEC mordec innovative solutions uk ltd		TESTING AND CERTIFICATION CENTRE [MORDEC authorized testing and certification centre] No. 2, Sixth Lok Yang Road #03-03 Scott and English Building Singapore 628100			
CERTIFICATE OF TEST AND EXAMINATION OF LIFTING APPLIANCES AND GEARS					
Customer Name: MEP Systems Pte Ltd			Certificate No.: MTC - 00001		
Customer Ref:			Issue Date: 01/01/10		
Distinguishing Mark	Description	Quantity Tested	Date of Inspection	Working Load Limit	Test Load Applied
MTC-00001	Dia 18mm x 2.05mtr Galv'd Steel Wire Rope c/w Both Ends Hand Spliced Soft Eyes	2 Lgth	01/01/10	3.7 Ton	7.4 Ton
Remark (if any):					
This document certifies that the items or appliances described herein were tested and examined in accordance to standards specified overleaf. Test products were found to have withstood the load test without deformation and free from cracks or any visible defects. This certificate is issued solely for the purpose of ascertaining the condition of the items described herein at the time of the Test and shall not be relied upon as certification of the quality of the items other than what has been specifically tested as described herein.					
Keith Tan (MCE-062) Name of Examiner / Tester			 Signature / Date		
[Factories Act, 1961; Docks Regulations, 1988; The Lifting Operations and Lifting Equipment Regulations, 1998] [Shipbuilding and Ship-repairing (Safety, Health and Welfare) Regulations, 1975]					
We are able to test lifting gears and appliances compliance to the various classification societies' specifications and standards:					
      					

Steel Wire Rope Manual

Drum Capacity (Feet of rope) =
 $(B + A) \times A \times C \times F$
 where A, B and C are in inches.

For example, if the diameter of the drum is 18 inches, the depth of the flange is 2 inches and the distance between drum flange is 24 inches, the drum's capacity for a 3/4 inch rope is:
 Capacity = $(18 + 2) \times 2 \times 24 \times .465 = 446$ feet.

TABLE 1.1

DRUM OR REEL CAPACITY FACTOR	
Nominal Rope Diameter (Inches)	F
1/4	4.160
5/16	2.670
3/8	1.860
7/16	1.370
1/2	1.050
9/16	0.828
5/8	0.672
3/4	0.465
7/8	0.342
1	0.262
1 1/8	0.207
1 1/4	0.167
1 1/2	0.138
1 3/4	0.116
1 7/8	0.099
2	0.085
2 1/8	0.074
2 1/4	0.066
2 1/2	0.058
2 3/4	0.052
3	0.046
3 1/2	0.042

The factor (F) applies to nominal rope size and level winding. Since new ropes are usually oversized by 1/32" per 7/32" of rope diameter, the result obtained by the formula must be decreased to account for oversized rope and/or random or uneven winding, as follows:

For oversized ropes decrease the calculated length by from 0 - 6%.

For random wound ropes decrease the calculated length by from 0 - 8%.

Whenever possible use grooved drums rather than smooth drums as the grooves furnish better support for the rope that do flat surfaces, and more uniform winding results in less abrasive wear on the rope. The groove surfaces on grooved drums and the complete surface on smooth drums should be perfectly

smooth, those which have taken the imprint of the outer wires of previous ropes will exert a grinding action on new ropes.

This imprinting and scoring is caused by high contact pressures between the rope and drum surface. If this condition is evident then the drum must be resurfaced and the contact pressure reduced by:

- (a) decreasing the load on the rope, or
- (b) increasing the drum diameter, or
- (c) replacing the drum with one having harder metal.

The radial contact pressure can be calculated as follows:

$$P = \frac{2L}{Dd}$$

Where P = radial pressure in psi (Fig.4.8)
 L = rope load in pounds
 D = tread diameter of drum or sheaves (inches)
 d = rope diameter (inches)

Example: 7/8 x 19 Round Strand rope maximum working load = 11,800 lbs.
 drum diameter = 18"

$$P = \frac{2L}{Dd} = \frac{2(11,800)}{18 \times 7/8} = 1498 \text{ psi}$$

This contact pressure means, from the table, that the drum must be Manganese steel.

It is suggested the limit given in table 1.2 be observed for all drums and sheaves.

TABLE 1.2

Rope Construction	Contact Pressure (PSI) Limits For Sheave & Drum Materials		
	Cast Iron	Cast Steel	Manganese Steel
6 x 7 Reg. Lay	300	550	1,500
6 x 7 Lang Lay	350	625	1,700
6 x 19 Reg. Lay	500	900	2,500
6 x 19 Lang Lay	575	1,025	2,850
6 x 37 Reg. Lay	600	1,075	3,000
6 x 37 Lang Lay	700	1,250	3,500
8 x 19 Reg. Lay	600	1,075	3,000
6 x 8 Flat Strand	500	900	2,500
6 x 25 Flat Strand	800	1,450	4,000
6 x 33 Flat Strand	975	1,800	4,900

Steel Wire Rope Manual

Fig. A Determination of Drum Capacity

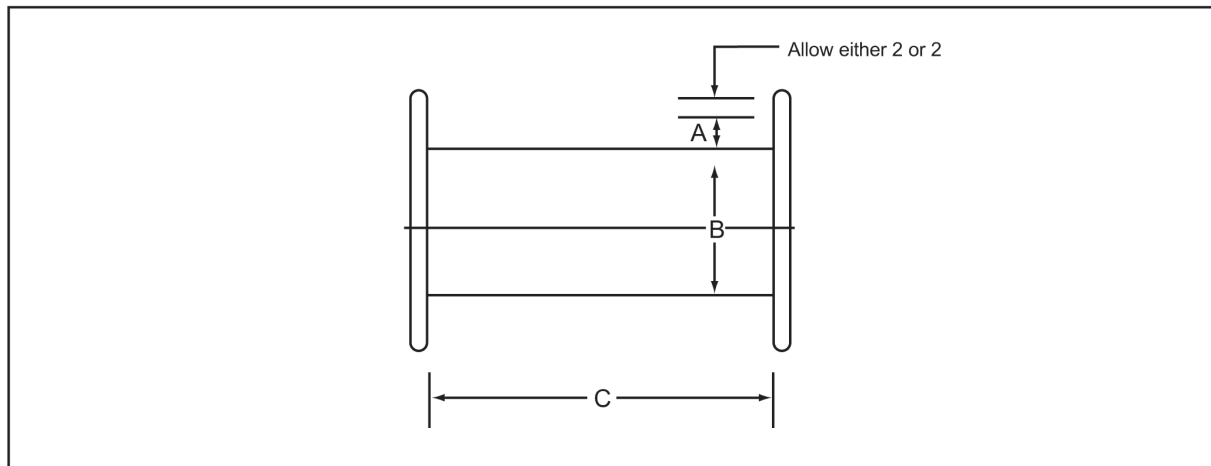


Fig. B Check For Drum Scoring During Inspections

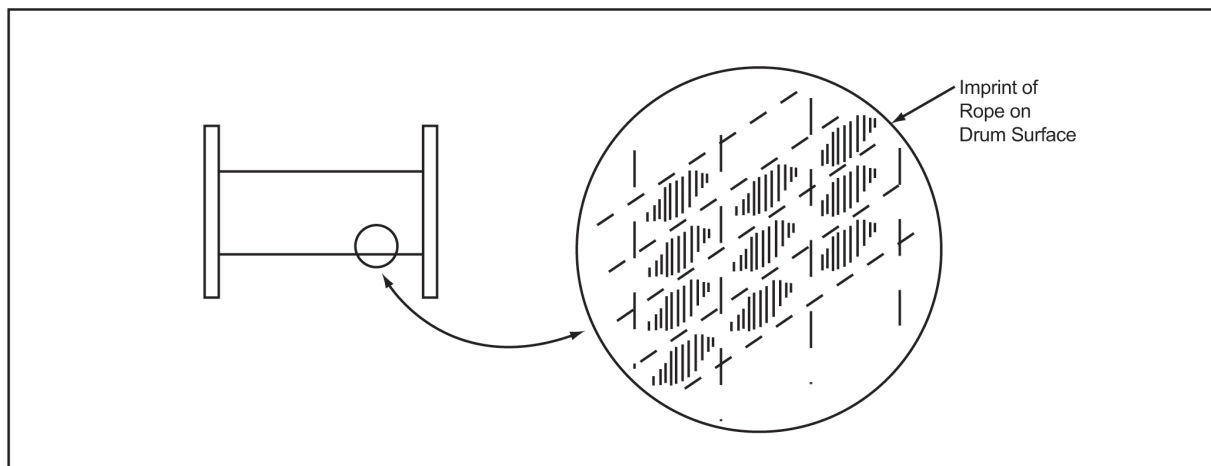
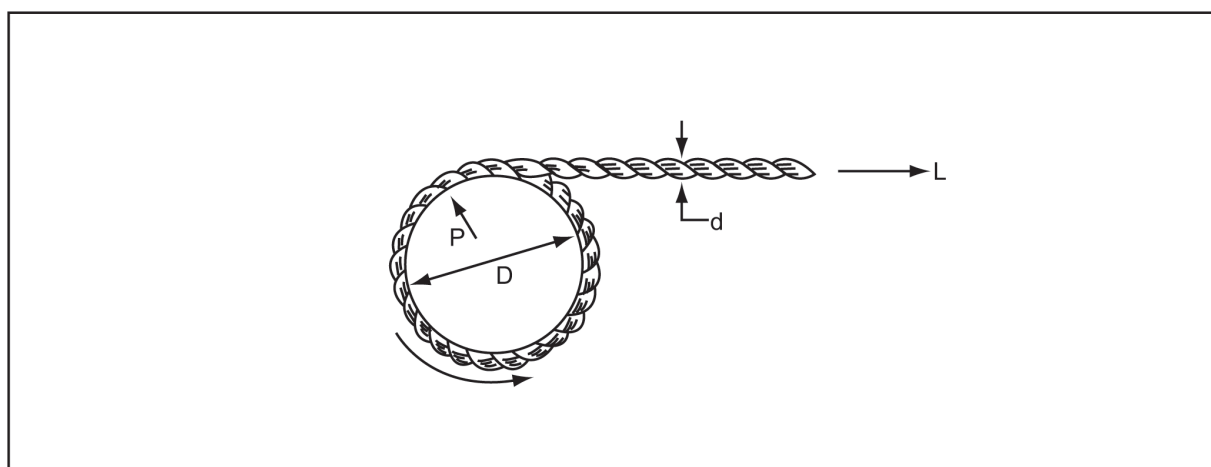


Fig. C Determination of Drum Contact Pressures



Steel Wire Rope Lubrication

LubMaster WRD

DESCRIPTION

LubMaster Wire Rope Dressing (WRD) COMPOUND is a semi fluid grease, specifically formulated wax/polymer lubricant, that is totally water repellent.

Wire ropes contain numerous moving parts which require lubrication. Each time the rope bends or flexes, the internal strands rub together. **LubMaster WRD** ensures that the rope is lubricated throughout while providing a nondrying, non-tacky film on the outside of the rope. Such protects outer strands from corrosion as well as lubricates the wire rope drums and sheaves.

Compound coats wire rope strands externally to prevent friction and wear. Dressing that is aromats free has good creeping capability to IWRC (Steel Core) ropes core resulting in longer wire rope life, less downtime for rope changes, and enhanced productivity.

TYPICAL APPLICATION

- Hoists, Cranes, drag lines, offshore wire ropes in extreme or harsh environments.
- Wire ropes running or standing, being used at ports and ship loader facilities.
- Rust protection for all exposed metal surfaces.

BENEFITS

- Unique wax/polymer formulation forms pliable external coating.
- High treat level of anti-rust additives eliminates corrosion problems in the harshest environments.
- Low viscosity base fluid, coupled with penetrating agents, provide complete internal penetration and protection to ropes.
- Thixotroping agents minimize dripping and fling off.

NOTES

- Can be applied by brush or drip, but preferably sprayed to activate thixotrope.

LubMaster WRD Cable Laid Application



Steel Wire Rope Lubrication

LubMaster WRD

PROPERTIES

TYPICAL PROPERTIES

Color	Gray Black
Apparent Viscosity @ 25°C	1000cP
Drop Point	100°C
Breaking Point	Below-40°C
Residual Film Thickness	120 micron
Salt Spray Corrosion ASTM B117	+1000 hrs
Capillary Creep (SIS 1860 17) @ 10°C	+10mm
Four Ball Anti-Wear Scar 60 min @ 40kg. (mm)	0.6mm

This information in this bulletin is, to our best knowledge, true and accurate, but all recommendation or suggestions are made without guarantee, since the conditions of use are beyond our control. It is the user's obligation to evaluate and use the product safely and to comply with all applicable laws and regulations.

Specifications as at November 2006

Steel Wire Rope Lubrication

LubMaster Grease

DESCRIPTION

LubMaster Grease is a blend of high viscosity petroleum base oil with shear stable lithium soap thickener, fortified anti wear, anti rust with unique additives package combine to achieve high performance and year-round utility lubricant for wire ropes. This results in longer wire rope life, less downtime for rope changes and enhanced productivity.

TYPICAL APPLICATION

Lubrication and maintenance of draglines, towing cables, pendant ropes and other offshore applications can be simplified by use of **LubMaster Grease**.

BENEFITS

- Solid additives package are pre-activated to increase their natural positive affinity to all metal surfaces to ensure easy lubricant applications for extended re-lubrication intervals.
- Polymer allows flexibility to **external coating** for wire rope in harsh environments.
- Bonding and cohesive properties provide superior lubrication to withstand wet corrosive conditions.
- Scientifically designed for self-sealing protection, keeping ropes from dust and dirt build-up.
- Long lasting dressing formed to **resist fling-off and cracking**.

NOTES

- **LubMaster Grease** is not compatible with sodium or inorganic base greases.
- Best performance when applied with Mastro Spray (Compress Air Assisted Method ensures penetration to Wire's centre core strand).

LubMasterGrease Application on Coiled Wire Ropes



Steel Wire Rope Lubrication

LubMaster Grease

PROPERTIES

TYPICAL PROPERTIES

NLGL Grade	2
Colour	Grey Black
Thickener	Mixed Soap Lithium
Texture	Smooth Tacky Adhesive
Base Oil Viscosity: cSt @ 40°C	860
cSt @ 100°C	41.6
Safe operating temp. °C	118
Emcor Rust Test	(Pass)
Timken EP OK Kg.	36
Four Ball Test Weld Load Kg.	800
Wear index	93
Additive Package	Heavy Duty

This information in this bulletin is, to our best knowledge, true and accurate, but all recommendation or suggestions are made without guarantee, since the conditions of use are beyond our control. It is the user's obligation to evaluate and use the product safely and to comply with all applicable laws and regulations.
Specifications as at November 2006