



Sutlej Ropes Pvt. Ltd



www.sutlejropes.com

ABOUT US



Sutlej Ropes is a steel wire and steel wire rope manufacturing company having a production capacity of 10,000 tons per annum.

Coming into existence in 2003, Sutlej Ropes manufacturing unit boasts of state of the art and modern machinery. Sutlej employs a number of professionals with vast experience in their fields to cater to a wide list of international clientel.

Accredited with ISO 9001:2000, Sutlej Ropes is committed to manufacture & supply wire ropes of high quality at effectively optimized cost, through continual process improvement.

Strategically we are working towards being a global player in the wire rope industry. Growth, alliances and cost advantages are the key tools towards achieving our goals.

OUR PRODUCTS

At Sutlej Ropes, we take pride in our product, its world-class quality and our range of specialized variants. Each unit of our steel wire ropes meets the most exacting standards of quality toughness, tensile strength, flexibility, abrasion resistance and fatigue resistance. They are drawn to the strictest specifications and every coil of every variant is thoroughly tested to ensure that it complies with international standards.

But, to ensure this level of perfection in the product we make, we need to be sure of the quality of steel we use. In the older days, Crucible Cast Steel and Mild Plow Steel were used to make wire ropes. However, we do not use lower grades of carbon steel wire, since today's modern machinery and equipment requires higher strength wire ropes, because of greater loads and fatigue. Keeping this in mind, we almost exclusively use Improved Plow Steel and Special Improved Plow Steel in the making of our wire ropes. Depending upon the industry-specific use, we make these ropes with a tensile strength ranging from 2,40,000 to 2,90,000 pounds per sq. inch. Our elevator wire ropes, however, are customized because they must be made of steel of low tensile strength and high flexibility.

Our integrated wire rope facilities include stranding machines with 6 bobbins, 12 bobbins, 18 bobbins, 36 bobbin machines and high speed wire rope closers. These stranding machines, along with our coiling and other equipment enable our production to include variations of all types of industrial steel wire ropes. These are the different variants of our Steel Wire Ropes –



CRANES



AERIAL ROPES



FISHING ROPES



LIFE BOAT ROPES



LOGGING



MINING



SUSPENSION BRIDGE



SHIPPING ROPES



OIL EXPLORATION ROPES

OUR PRODUCTS

MINING

- 1. Underground Mining
 - (a) Haulage Rope
 - (b) Drum Winding Rope
 - (c) Friction Winder Rope
 - (d) Sinking Rope
 - (e) Balance Rope or Tail Rope
 - (f) Guide and Rubbing Rope
 - (g) Coal Cutting MachineRope
 - (h) Slusher Rope
 - (i) Roof Stitching Rope
- 2. Open Cast Mining (six stranded ropes)
 - a. Shovels
 - i. Bucket Hoist Rope
 - ii. Boom Hoist Rope
 - iii. Trip Rope
 - b. Draglines
 - i. Drag Ropes
 - ii. Hoist Rope
 - c. Dozers

FISHING ROPE

- A. Trawl Rope

LIFE BOAT ROPES

- A. Life Boat Falls
- B. Life Boat Davit Guys

SUSPENSION BRIDGES

- A. Main Cable
- B. Suspender
- C. Guy Rope

SHIPPING ROPES

- A. Standing Rigging
- B. Mooring Ropes
- C. Towing Rope

CRANES

- (a) E.O.T. Cranes
- (b) Hot Metal E.O.T. Cranes
- (c) Stripper
- (d) Skip Hoist
- (e) Wagon Hauler
- (f) Wagon Trippler
 - a. Hoist Rope
 - b. Counter Weight Rope
- (g) Mobile Cranes
 - a. Hoist Rope
 - b. Guy Rope or Stay Rope


LOGGING

- A. Tractor Logging
 - a. Archlines and Winch lines
 - b. Chokers
- B. Portable High Lead System (Steel Spar)
 - a. Main Line
 - b. Haulback Line
 - c. Straw Line
 - d. Guys (Drum Tensioned)
 - e. Choker
- C. Tight Skyline System
 - a. Sky Line
 - b. Mainline Skidding Line
 - c. Haulback Line
 - d. Strawline
 - e. Choker
- D. Slack Line System (Fixed)
 - a. Main Line or Skidding Line
 - b. Haulback Line
 - c. Tightening Line
 - d. Chokers
- E. Ground Skidders
 - a. Mainline
 - b. Haulback Line
- F. Cargo Working Gear
 - a. Cargo Falls and Cargo Runners
 - b. Topping Pendants
 - c. Topping Lifts
 - d. Guy Pendants
- G. Preventer Stays

OIL EXPLORATION ROPES

- A. Casing Line Ropes
- B. Sand Line Ropes
- C. Bull Line Ropes
- D. Pig Tail Ropes

AERIAL ROPES



भारतीय मानक ब्यूरो
BUREAU OF INDIAN STANDARDS

Address: Plot No. 4-A,
Sector 27 -B,
Madhya Marg-
Chandigarh
160019
Phones : 0172-2659072
Fax: 0172-2659072
E-Mail: mdch2@bis.org.in

Chandigarh Branch Office-I,
Northern Regional Office,
Bureau of Indian Standards

web : http://www.bis.org.in


लाइसेन्स संख्या सी एम 9526386 की संलग्नी
ATTACHMENT TO LICENCE NO. CML- 9526386


सी एम/एल संख्या CML/NO	लाइसेंसधारी का पता सहित नाम NAME OF THE LICENSEE WITH THE ADDRESS	उत्पाद का नाम NAME OF THE PRODUCT	भा मा संख्या IS NO.
9526386	M/s Suttlej Ropes Pvt Ltd 583/584, Industrial Area-B, Ludhiana, Distt- Sangrur PUNJAB- 141003	Wire Ropes and Strands for Suspension Bridges	IS 9282 : 2002

पुनःअंकन संख्या 15 दिनांक
ENDORSEMENT NO. 15 DATED : 13-07-2020

लाइसेंस 30-06-2020 तक वैध था,
Whereas, the licence was valid upto 30-06-2020,
अब, नवीनीकरण के परिणामस्वरूप मे दिये गये लाइसेंस की वैधता को
एक जुलाई दो हजार बीस से तीस जून दो हजार इक्कीस तक बढ़ा दिया गया है।
Now, consequent upon renewal, the validity of the licence has been extended from
First July Two Thousand and Twenty to Thirtieth June Two Thousand and Twenty One.

लाइसेंस की अन्य निबन्धन व शर्तें यथावत हैं।
Other terms and conditions of Licence remain the same.

अभिहित प्राधिकारी के हस्ताक्षर

(राम सिंह)
वैमानिक सी



भारतीय मानक ब्यूरो
BUREAU OF INDIAN STANDARDS

Address: Plot No. 4-A,
Sector 27 -B,
Madhya Marg-
Chandigarh
160019
Phones : 0172-2659072
Fax: 0172-2659072
E-Mail: mdch2@bis.org.in

Chandigarh Branch Office-I,
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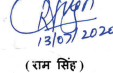
लाइसेन्स संख्या सी एम 9529897 की संलग्नी
ATTACHMENT TO LICENCE NO. CML- 9529897

सी एम/एल संख्या CML/NO	लाइसेंसधारी का पता सहित नाम NAME OF THE LICENSEE WITH THE ADDRESS	उत्पाद का नाम NAME OF THE PRODUCT	भा मा संख्या IS NO.
9529897	M/s Suttlej Ropes Pvt Ltd Dhandari kalan Near Ralson Tyre Ludhiana, PUNJAB- 141003	Wire Ropes Used in Oil Wells and Oil Well Drilling	IS 4521 : 2001

पुनःअंकन संख्या 14 दिनांक
ENDORSEMENT NO. 14 DATED : 13-07-2020

लाइसेंस 30-06-2020 तक वैध था,
Whereas, the licence was valid upto 30-06-2020,
अब, नवीनीकरण के परिणामस्वरूप मे दिये गये लाइसेंस की वैधता को
एक जुलाई दो हजार बीस से तीस जून दो हजार इक्कीस तक बढ़ा दिया गया है।
Now, consequent upon renewal, the validity of the licence has been extended from
First July Two Thousand and Twenty to Thirtieth June Two Thousand and Twenty One.

लाइसेंस की अन्य निबन्धन व शर्तें यथावत हैं।
Other terms and conditions of Licence remain the same.

अभिहित प्राधिकारी के हस्ताक्षर

(राम सिंह)
वैमानिक सी



BSCIC

Certificate

QUALITY MANAGEMENT SYSTEM

This is to certify that:

SUTLEJ ROPES PVT. LTD.
G.T. ROAD, OPP. DHANDARI RAILWAY STATION
DHANDARI KALAN – 141 010, LUDHIANA
PUNJAB, INDIA

Hereby granted the Certificate Number: **BN19814/19393**

Subsequent to the Assessment of the organization, it has been found to be operating a Quality Management System which complies with the requirements of

ISO 9001:2015
For the following scope:
**Design, Manufacture and Supply of Steel Wire Ropes;
Manufacture and Supply of Steel Wire and Strand**
IAF Scope: 17a

For
BSCIC CERTIFICATIONS PVT.LTD.


Sanjay Singh
Managing Director

Originally Registered: 25-Jun-2021 1st Surveillance Due on: 22-Jun-2022
Issue Date: 25-Jun-2021 2nd Surveillance Due on: 22-Jun-2023
Expiry Date: 24-Jun-2024

(In case if Surveillance Audit is not allowed to be conducted; this Certificate shall be Suspended/Withdrawn).


Please Re-validate this certificate's status at www.bscic.com at REGISTRATION STATUS.
This Certificate of Registration is granted subject to relevant provisions of the BSCIC Certifications PVT. LTD. Contract Terms & Scheme for Registration Form 2018 (Latest Version). Please see B018 at our website www.bscic.com.
This certificate of Registration remains the property of BSCIC Certifications Pvt. Ltd. and shall be returned immediately upon request.
BSCIC Headquarters: Block, 1st Floor, 201/5A, Crown Plaza Mall, Faridkot - 151 007, Haryana, India.

Version No. 1





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भारतीय मानक ब्यूरो
BUREAU OF INDIAN STANDARDS

Address: Plot No. 4-A,
Sector 27 -B,
Madhya Marg-
Chandigarh
160019
Phones : 0172-2659072
Fax: 0172-2659072
E-Mail: mdch2@bis.org.in

Chandigarh Branch Office-I,
Northern Regional Office,
Bureau of Indian Standards

web : http://www.bis.org.in


लाइसेन्स संख्या सी एम 9510977 की संलग्नी
ATTACHMENT TO LICENCE NO. CML- 9510977


सी एम/एल संख्या CML/NO	लाइसेंसधारी का पता सहित नाम NAME OF THE LICENSEE WITH THE ADDRESS	उत्पाद का नाम NAME OF THE PRODUCT	भा मा संख्या IS NO.
9510977	M/s Suttlej Ropes Pvt Ltd Dhandari Kalan Near Ralson Tyre, Ludhiana, PUNJAB- 141003	Steel Wire Ropes for General Engineering Purposes	IS 2266 : 2002

पुनःअंकन संख्या 16 दिनांक
ENDORSEMENT NO. 16 DATED : 02-06-2020

लाइसेंस 31-03-2020 तक वैध था,
Whereas, the licence was valid upto 31-03-2020,
अब, नवीनीकरण के परिणामस्वरूप मे दिये गये लाइसेंस की वैधता को
एक अप्रैल दो हजार बीस से इक्कीस मार्च दो हजार इक्कीस तक बढ़ा दिया गया है।
Now, consequent upon renewal, the validity of the licence has been extended from
First April Two Thousand and Twenty to Thirty First March Two Thousand and Twenty One.

लाइसेंस की अन्य निबन्धन व शर्तें यथावत हैं।
Other terms and conditions of Licence remain the same.

अभिहित प्राधिकारी के हस्ताक्षर

(राम सिंह)
वैमानिक सी



भारतीय मानक ब्यूरो
BUREAU OF INDIAN STANDARDS

Address: Plot No. 4-A,
Sector 27 -B,
Madhya Marg-
Chandigarh
160019
Phones : 0172-2659072
Fax: 0172-2659072
E-Mail: mdch2@bis.org.in

Chandigarh Branch Office-I,
Northern Regional Office,
Bureau of Indian Standards

web : http://www.bis.org.in


लाइसेन्स संख्या सी एम 9700065921 की संलग्नी
ATTACHMENT TO LICENCE NO. CML- 9700065921

सी एम/एल संख्या CML/NO	लाइसेंसधारी का पता सहित नाम NAME OF THE LICENSEE WITH THE ADDRESS	उत्पाद का नाम NAME OF THE PRODUCT	भा मा संख्या IS NO.
9700065921	M/s Suttlej Ropes Private Limited 583/584, Industrial Area-b, Mullerganj, Ludhiana, PUNJAB- 141003	Steel Wire Ropes for Haulage Purposes	IS 1856 : 2005

पुनःअंकन संख्या 03 दिनांक
ENDORSEMENT NO. 03 DATED : 13/7/2020

लाइसेंस 30-06-2020 तक वैध था,
Whereas, the licence was valid upto 30-06-2020,
अब, नवीनीकरण के परिणामस्वरूप मे दिये गये लाइसेंस की वैधता को
एक जुलाई दो हजार बीस से तीस जून दो हजार इक्कीस तक बढ़ा दिया गया है।
Now, consequent upon renewal, the validity of the licence has been extended from
First July Two Thousand and Twenty to Thirtieth June Two Thousand and Twenty One.

लाइसेंस की अन्य निबन्धन व शर्तें यथावत हैं।
Other terms and conditions of Licence remain the same.

अभिहित प्राधिकारी के हस्ताक्षर

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वैमानिक सी

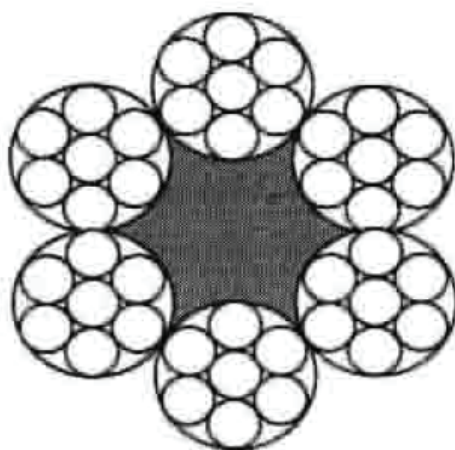
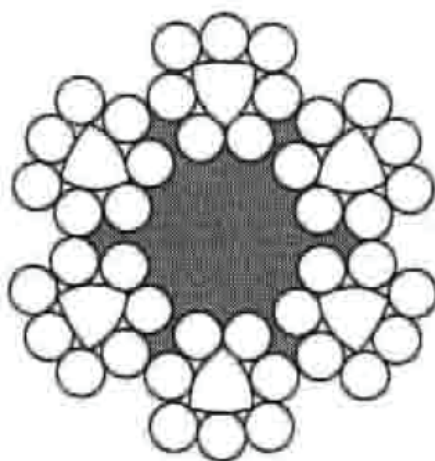


TABLE I - 6X7 (6/1) CONSTRUCTION FIBRE CORE ROPES

Nominal Diameter	Approximate Mass	Minimum Breaking Load Corresponding to Tensile Designation of Wires (N/mm ²)		
		1570	1770	1960
1	2	3	4	5
mm	kg/100m	kN	kN	kN
13	60.3	88	99	110
14	70.0	102	115	128
16	91.5	133	151	167
18	116	169	190	211
19	129	188	212	235
20	143	209	235	260
21	158	230	259	287
22	173	252	285	315
24	206	300	339	375
25	223	326	367	407
26	242	352	397	440
27	260	380	429	475
28	280	409	461	510
29	300	439	494	548

(a) Approx. mass with Steel Core = Value in Col. 2 x 1.10

(b) Breaking load value with Steel Core=Values In Col. 3 & 4 X 108



**TABLE II - BREAKING LOAD AND MASS FOR
6 x 9 (8 / △) CONSTRUCTION**

Nominal Diameter	Approximate Mass		Minimum Breaking Load Corresponding to Tensile Designation of Wires			
	Fibre Core	Steel Core	1570		1770	
			Fibre Core	Steel Core	Fibre Core	Steel Core
1	2	3	4	5	6	7
mm	kg/100m	kg/100m	kn	kn	kn	kn
13	68.9	75.1	95	100	107	113
14	79.9	87.0	110	116	124	131
16	104	114	143	152	161	171
18	132	144	181	192	204	217
19	147	160	202	214	228	241
20	163	178	224	237	252	267
22	197	215	271	287	305	324
24	235	256	322	342	363	385
26	275	300	378	401	426	452
28	319	348	438	465	494	524
32	417	455	573	607	646	684
36	528	576	725	768	817	866

NOTE :

(a) To obtain the calculated breaking loads, multiply the figures given in col. 4, 6 and 8 by 1.137 and those given in col. 5, 7 and 9 by 1.18

(b) In case of wire, 3 or more wires may be used.

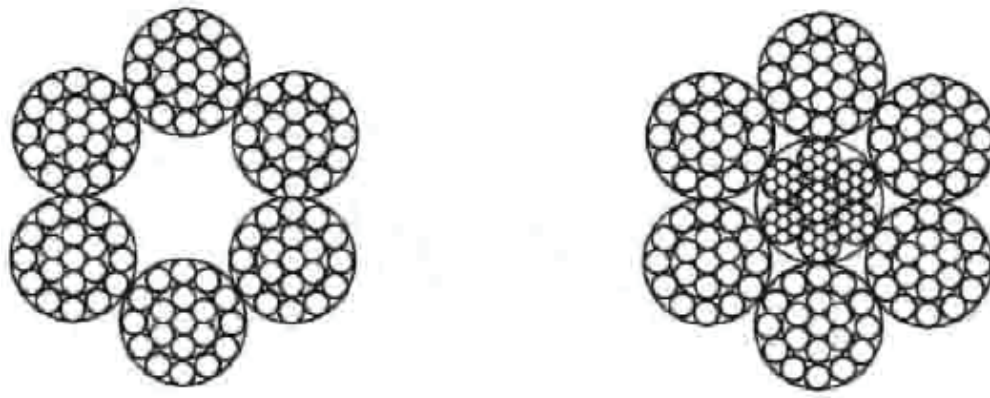


TABLE III - 6X19(12/6/1) CONSTRUCTION

Nominal Diameter	Approximate Mass		Minimum Breaking Load Corresponding Tensile Designation of Wires (N/mm ²)							
	Fibre Core	steel Core	1230	1420	1570		1770		1960	
					Fibre Core	Steel Core	Fibre Core	Steel Core	Fibre Core	Steel Core
(1) mm	(2) Kg/100m	(3) Kg/100m	(4) kN	(5) kN	(6) kN	(7) kN	(8) kN	(9) kN	(10) kN	(11) kN
6	12.5	--	13.6	15.7	17.4	--	--	--	--	--
7	17.0	--	18.5	21	23.7	--	--	--	--	--
8	22.1	24.3	24	28	31	33	35	37.6	39	41.6
9	28.0	30.8	31	36	39	42	44	47.5	49	52.6
10	34.6	38.0	38	44	48	52	54	58.7	60	65.0
11	41.9	46.0	46	53	58	63	66	71.0	73	78.7
12	49.8	54.0	54	63	69	75	78	84.6	87	93.6
13	58.5	64.3	--	--	82	88	92	99	102	110
14	67.8	74.5	--	--	95	102	107	115	118	127
16	88.6	97.4	--	--	124	133	139	150	154	166
18	112	123.0	--	--	156	160	176	190	195	210
19	125	137.0	--	--	174	188	196	212	217	234
20	138	152.0	--	--	193	208	218	235	241	260
22	167	184.0	--	--	234	252	263	284	292	314
24	199	219.0	--	--	278	300	313	338	347	375
26	234	257.0	--	--	326	352	368	397	407	439
28	271	--	--	--	378	--	426	--	472	--
32	354	-	-	-	494	--	557	--	617	--
36	448	219.0	--	--	--	--	705	--	781	--
38	499	257.0	--	--	--	--	785	--	870	--
40	554	--	--	--	--	--	870	--	964	--
44	670	--	--	--	--	--	1053	--	1166	--
48	797	--	--	--	1112	--	1253	--	1388	--
52	936	--	--	--	1305	--	1471	--	1629	--

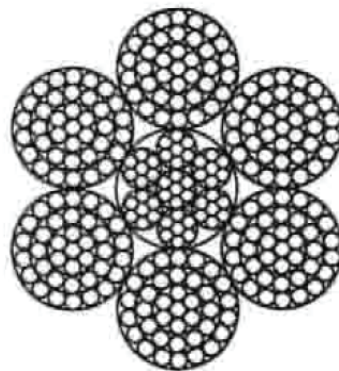
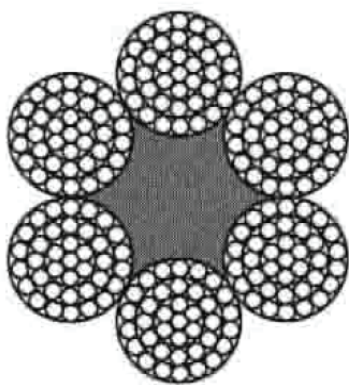


TABLE IV- 6X37 (18/12/6/1) CONSTRUCTION

Nominal Diameter	Approximate Mass		Minimum Breaking Load Corresponding Tensile Designation of Wires (Nimmt ²)					
	Fibre Core	steel Core	1570		1770		1960	
			Fibre Core	Steel Core	Fibre Core	Steel Core	Fibre Core	Steel Core
(1) k/100m	(2) Kg/100m	(3) Kg/100m	(4) kN	(5) kN	(6) kN	(7) kN	(8) kN	(9) kN
8	22.1	24.4	30	32	33	36	37	40
9	28.0	30.8	37	40	42	46	47	51
10	34.6	38.1	46	50	52	56	58	62
11	41.9	46.1	56	60	63	68	70	76
12	49.8	54.8	67	72	75	81	83	90
13	58.5	64.3	78	84	88	95	98	105
14	67.8	74.6	91	98	102	110	113	122
16	88.6	97.4	118	128	134	144	148	160
18	112	123	150	162	169	183	187	202
19	125	137	167	180	188	203	209	225
20	138	152	185	200	209	225	231	250
22	167	184	224	242	253	273	280	302
24	199	219	267	288	301	325	333	359
26	234	257	313	338	353	381	391	422
28	271	297	363	392	409	442	452	489
32	354	389	474	512	534	577	592	639
36	448	492	600	648	676	730	749	809
38	499	549	668	722	753	813	834	901
40	554	608	741	800	835	902	924	998
44	670	--	896	--	1010	--	1119	--

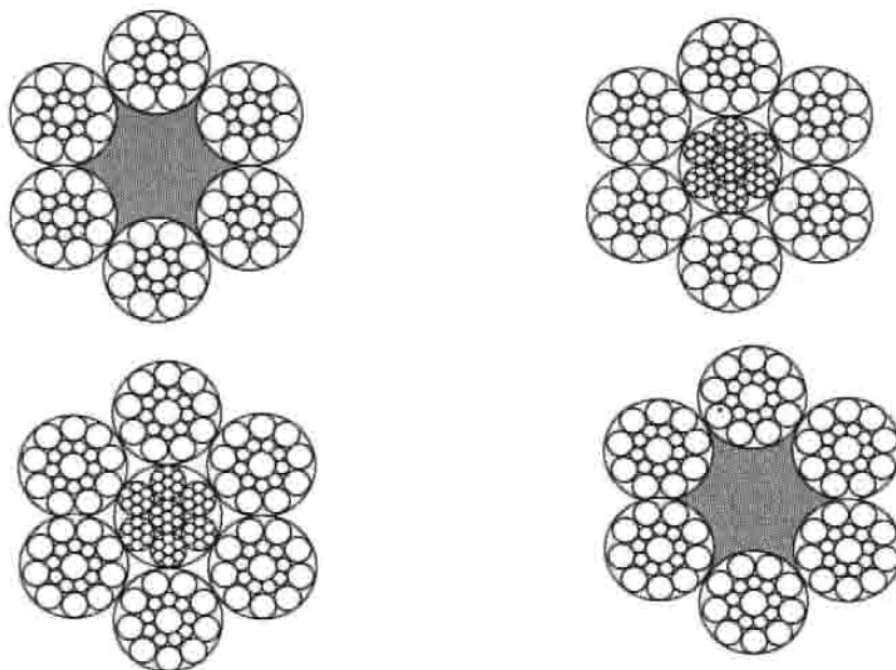


TABLE V - 6X17 (8/8/1) & 6X19 (9/9/1) SEALE CONSTRUCTION

Nominal Diameter	Approximate Mass		Minimum Breaking Load Corresponding Tensile Designation of Wires (N/mm ²)							
	Fibre Core	steel Core	1230	1420	1570		1770		1960	
					Fibre Core	Steel Core	Fibre Core	Steel Core	Fibre Core	Steel Core
(1) mm	(2) Kg/100m	(3) Kg/100m	(4) kN	(5) kN	(6) kN	(7) kN	(8) kN	(9) kN	(10) kN	(11) kN
6	--	--	14.7	16.9	--	--	--	--	--	--
7	--	--	19.9	23	--	--	--	--	--	--
8	23.3	26.2	26	30	33	36	37	40	42	45
9	30.2	33.2	33	38	42	45	47	51	53	57
10	37.3	41.0	41	47	52	56	59	63	65	70
11	45.1	49.6	49	57	63	68	71	77	78	85
12	53.7	59.0	59	68	75	81	84	91	93	101
13	63.0	69.3	69	79	88	95	99	107	110	118
14	73.0	80.3	80	92	102	110	115	124	127	137
16	95.4	105	104	120	133	144	150	162	166	179
18	121	133	132	152	168	182	190	205	210	227
19	135	148	147	170	188	203	211	228	234	253
20	149	164	162	188	208	224	234	253	259	280
22	180	168	--	--	251	272	283	306	314	339
24	215	236	--	--	299	323	337	364	374	403
26	252	277	--	--	351	379	396	428	438	474
28	292	321	--	--	407	440	459	496	508	549
32	382	420	-	-	532	575	600	648	664	717
36	483	531	--	--	673	727	759	820	841	908
40	596	656	--	--	831	898	937	1012	1038	1121
44	721	794	--	--	1006	1086	1134	1225	1256	1356
48	858	944	--	--	1197	1293	1349	1458	1494	1614
52	1008	1108	--	--	1405	1517	1584	1711	1754	1894

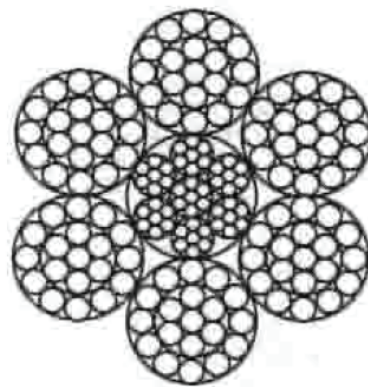
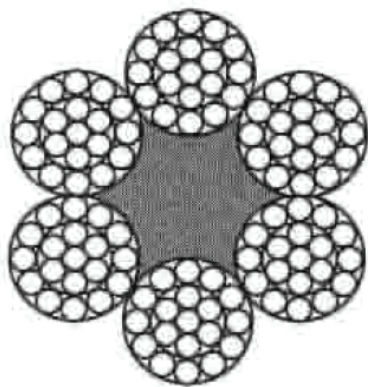
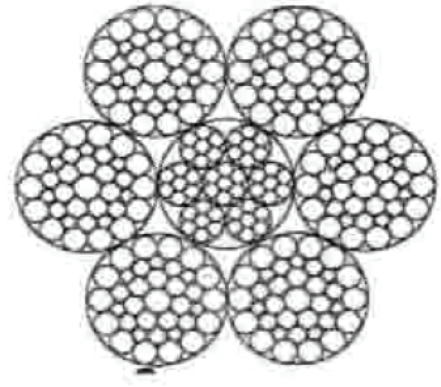
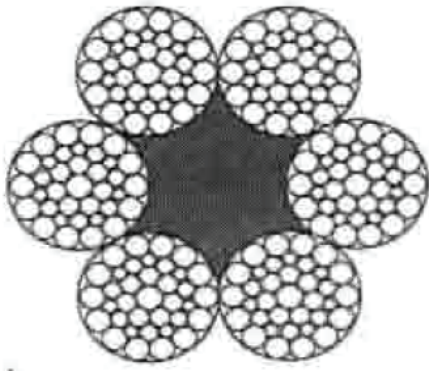


TABLE VI - 6 X 19 (12/6 + 6F/1) FILLER CONSTRUCTION

Nominal Diameter	Approximate Mass		Minimum Breaking Load Corresponding Tensile Designation of Wires (N/mm ²)							
	Fibre Core	steel Core	1230	1420	1570		1770		1960	
					Fibre Core	Steel Core	Fibre Core	Steel Core	Fibre Core	Steel Core
(1) mm	(2) Kg/100m	(3) Kg/100m	(4) kN	(5) kN	(6) kN	(7) kN	(8) kN	(9) kN	(10) kN	(11) kN
6	13.7	--	15.0	17.3	--	--	--	--	--	--
7	18.6	--	20.4	23	--	--	--	--	--	--
8	24.3	26.8	27	31	34	37	38	41	42	46
9	30.8	33.9	34	39	43	46	48	52	54	58
10	38.0	41.8	42	48	53	57	60	65	66	71
11	46.0	50.6	50	58	64	69	72	78	80	86
12	54.7	60.2	60	69	76	82	86	93	95	103
13	64.3	70.7	70	81	90	97	101	109	112	121
14	74.5	82.0	81	94	104	112	117	127	130	140
16	97.3	107	106	123	136	147	153	165	169	183
18	123	135	135	155	172	186	194	209	214	232
19	137	151	150	173	191	207	216	233	239	258
20	152	167	166	192	212	229	239	258	265	286
22	184	202	--	--	257	277	289	312	320	346
24	219	241	--	--	305	330	344	372	381	412
26	257	283	--	--	358	387	404	436	447	483
28	298	328	--	--	416	449	469	506	519	560
32	389	428	-	-	543	586	612	661	678	732
36	493	542	--	--	687	742	775	837	858	926
40	608	669	--	--	848	916	956	1033	1059	1144
44	736	810	--	--	1026	1109	1157	1250	1281	1384
48	876	964	--	--	1222	1319	1377	1487	1525	1647
52	1028	1131	--	--	1434	1548	1616	1745	1790	1933



**TABLE VII- BREAKING LOAD AND MASS FOR 6X36 (14/7 + 7/17/1)
SEALE - WARRINGTON CONSTRUCTION**

Nominal Diameter	Approximate Mass		Minimum Breaking Load Corresponding Tensile Designation of Wires (N/mm ²)					
	Fibre Core	steel Core	1570			1770	1960	
			Fibre Core	Steel Core	Fibre Core	Steel Core	Fibre Core	Steel Core
(1) mm	(2) Kg/100m	(3) Kg/100m	(4) kN	(5) kN	(6) kN	(7) kN	(8) kN	(9) kN
9	30.8	33.9	42	45	47	51	52	57
10	38.0	41.8	52	56	58	63	65	70
11	46.0	50.8	63	68	71	76	78	85
12	54.7	60.2	75	81	84	92	93	100
13	64.3	70.7	88	97	99	106	109	118
14	74.5	82.0	102	112	114	124	127	137
16	97.3	107	133	143	149	161	166	178
18	123	135	168	181	189	204	210	226
19	137	151	187	202	211	228	233	252
20	152	167	207	224	234	252	259	279
22	184	202	251	271	283	305	313	338
24	219	241	298	322	336	363	372	402
26	257	283	350	378	395	426	437	472
28	298	328	406	439	458	494	507	547
32	389	428	530	573	598	646	662	715
36	493	542	671	725	757	817	840	905
40	608	669	829	895	934	1009	1035	1117
44	736	810	1003	1083	1131	1221	1252	1352
48	876	964	1193	1289	1345	1453	1490	1609
52	1028	1131	1401	1513	1579	1705	1748	1888
56	1192	1311	1624	1754	1831	1978	2028	2190
60	1369	1506	1865	2014	2102	2270	2328	2514
64	1557	1713	2122	2291	2392	2583	2648	2860
68	1758	1934	2395	2587	2700	2916	2990	3229
72	1971	2168	2685	2900	3027	3269	3352	3620
76	2196	2416	2992	3331	3373	3643	3755	4034
80	2433	2676	3315	3580	3737	4036	4438	4469
84	2681	2951	3655	3947	4120	4450	4562	4928

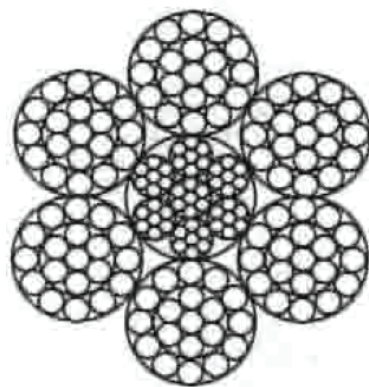
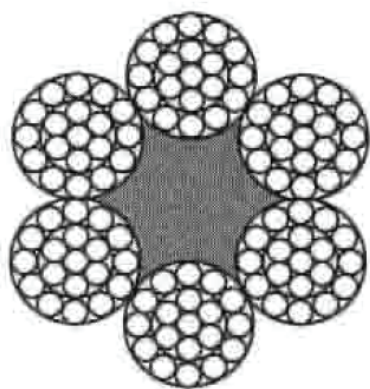
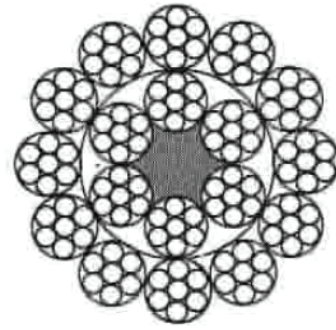
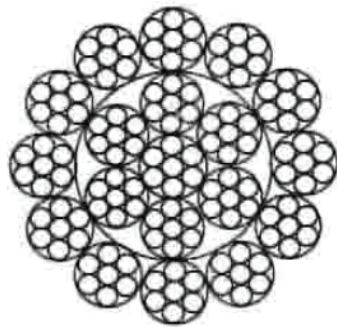
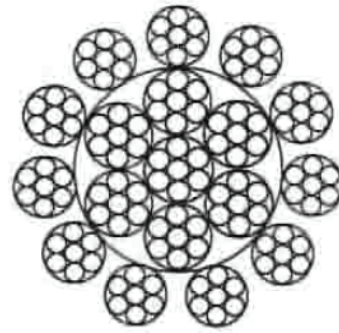
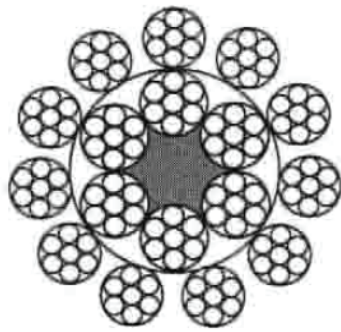


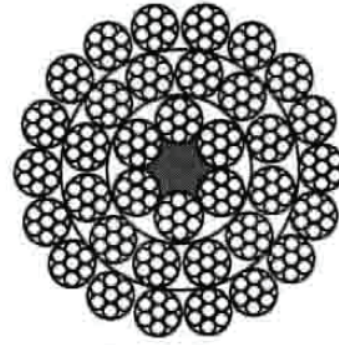
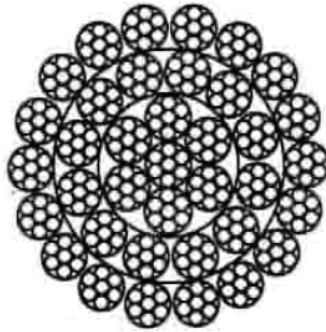
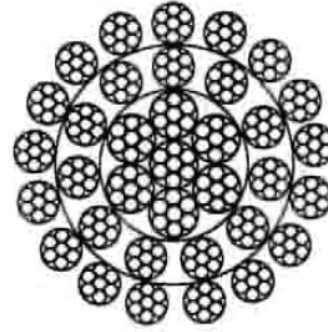
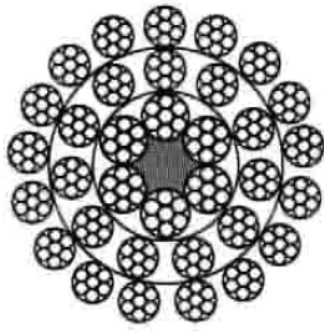
TABLE VIII - BREAKING LOAD AND MASS FOR 8 X 19(9/9/1) SEALE CONSTRUCTION

Nominal Diameter	Approximate Mass		Minimum Breaking Load Corresponding Tensile Designation of Wires (N/mm ²)							
	Fibre Core	steel Core	1230	1420	1570		1770		1960	
					Fibre Core	Steel Core	Fibre Core	Steel Core	Fibre Core	Steel Core
(1) mm	(2) Kg/100m	(3) Kg/100m	(4) kN	(5) kN	(6) kN	(7) kN	(8) kN	(9) kN	(10) kN	(11) kN
8	22.3	27.2	23	26	29	34	33	38	36	42
9	28.2	34.4	29	36	36	43	41	49	46	54
10	34.8	42.5	35	45	45	53	51	60	56	66
11	42.2	51.4	43	55	55	64	61	73	68	80
12	50.2	61.2	51	69	65	77	86	93	95	103
13	58.9	71.9	60	81	76	90	101	109	112	121
14	68.3	83.3	69	94	88	104	117	127	130	140
16	89.2	109	90	123	115	136	153	165	169	183
18	113	138	114	132	146	172	165	194	182	215
19	126	153	127	147	163	192	183	216	203	240
20	139	170	141	162	180	213	203	240	225	--
22	169	206	--	--	218	257	246	290	278	--
24	201	245	--	--	260	306	293	345	324	--
26	236	287	--	--	305	359	343	405	380	--
28	273	333	--	--	353	417	398	470	441	--
32	357	435	-	-	461	544	520	614	570	--
36	452	551			584	689	658	777	729	--



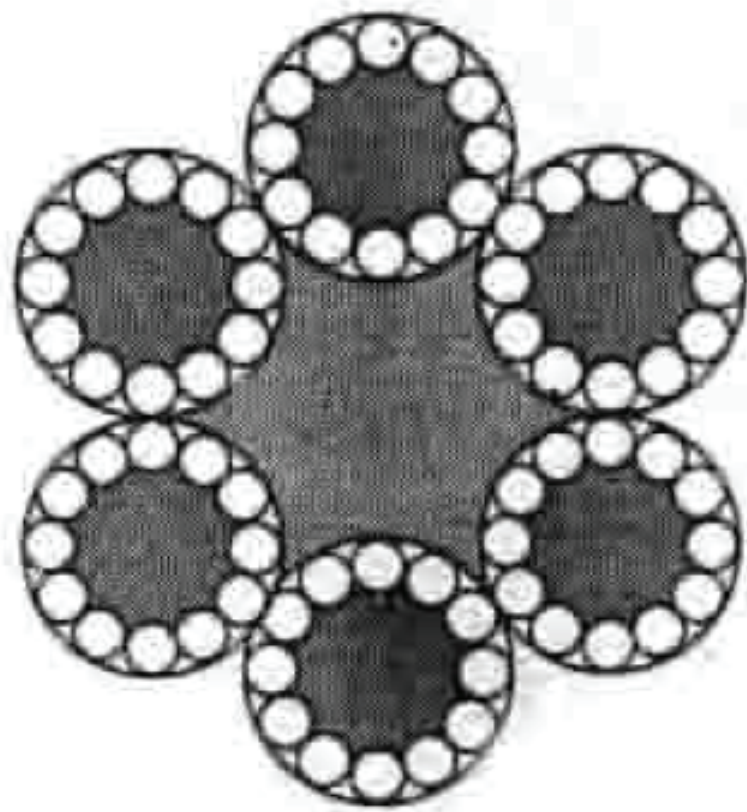
**TABLE IX -17X7 (6/1) AND 18X7 (6/1) FIBRE CORE & WSC
NON-ROTATING ROPES**

Nominal Diameter	Approximate Mass		Minimum Breaking Load Corresponding Tensile Designation of Wires (Nimm ²)					
	Fibre Core	steel Core		1570		1770	1960	
			Fibre Core	Steel Core	Fibre Core	Steel Core	Fibre Core	Steel Core
(1) mm	(2) Kg/100m	(3) Kg/100m	(4) kN	(5) kN	(6) kN	(7) kN	(8) kN	(9) kN
8	24.5	25.7	32	33	36	37	40	41
9	31.0	32.6	41	42	46	47	51	52
10	38.3	40.2	50	52	56	58	62	64
11	46.3	48.6	61	62	68	70	76	78
12	55.8	57.9	72	74	81	84	90	93
13	64.7	67.9	85	87	98	98	106	109
14	75.0	78.8	98	101	111	114	122	126
16	98.0	103	128	132	144	149	160	165
18	124	130	162	167	183	188	202	208
19	138	145	181	186	204	210	225	232
20	153	161	200	206	226	232	250	257
22	185	195	242	249	273	284	302	311
24	220	231	288	297	325	335	359	370
26	259	272	338	348	381	393	421	434
28	300	315	392	404	442	455	488	503
32	392	412	512	527	577	595	--	--



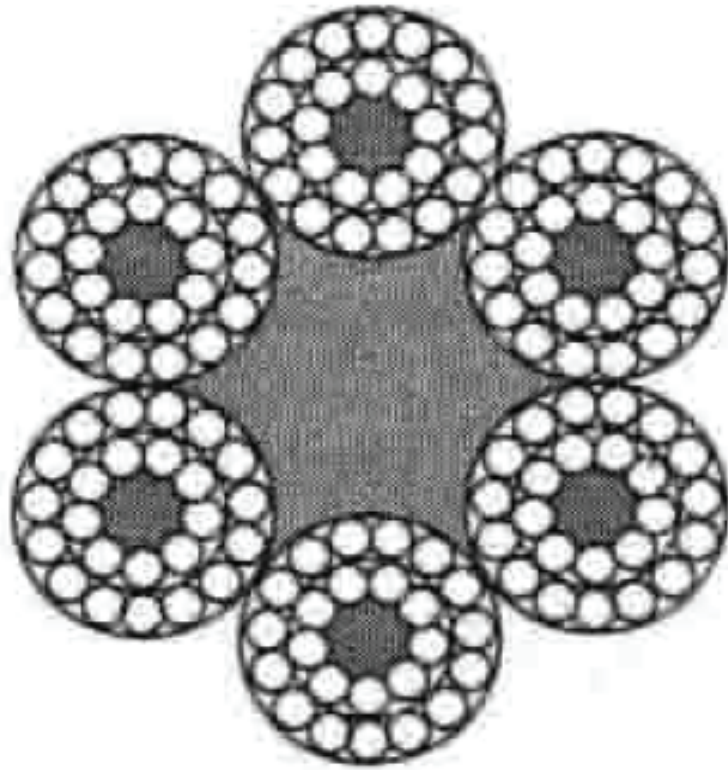
**TABLE X - 34 X 7 (16/1) AND 36X7 (6/1) WITH
FIBRE CORE NON-ROTATING ROPES**

Nominal Diameter	Approximate Mass		Minimum Breaking Load Corresponding Tensile Designation of Wires (N/mm ²)					
	Fibre Core	steel Core	1570		1770		1960	
			Fibre Core	Steel Core	Fibre Core	Steel Core	Fibre Core	Steel Core
(1) mm	(2) Kg/100m	(3) Kg/100m	(4) kN	(5) kN	(6) kN	(7) kN	(8) kN	(9) kN
12	56.2	57.9	71	72	80	81	88	90
13	65.9	67.9	83	84	93	95	103	105
14	76.5	78.8	96	98	108	110	120	122
16	99.9	103	125	128	141	144	157	160
18	126	130	159	162	179	183	198	202
19	141	145	177	181	199	203	221	225
20	156	161	196	200	221	225	245	250
22	189	195	237	242	267	273	296	302
24	225	231	282	268	318	325	352	359
26	264	272	331	338	374	381	414	422
28	306	315	384	392	433	442	480	489
32	400	412	502	512	566	577	627	639
36	506	521	634	648	716	730	739	809
40	624	643	784	800	884	902	979	999



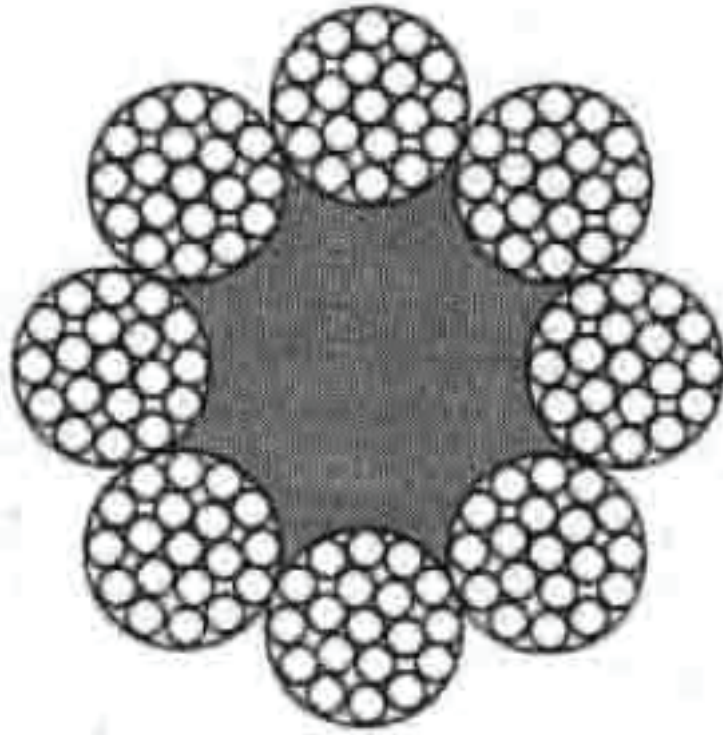
**TABLE XI-BREAKING LOAD AND MASS
OF 6 X 12 CONSTRUCTION**

Nominal Diameter + 6 percent -1 percent	Approximate Mass	Minimum Breaking Load Corresponding Tensile Designation of Wire of 1420 (N/mm ²)
(1)	(2)	(3)
mm	kg/100m	kN
8	16.0	19.0
9	20.3	24
10	25.1	30
11	30.3	36
12	36.1	43
14	49.1	58
16	64.2	76
18	81.2	96
20	100	118



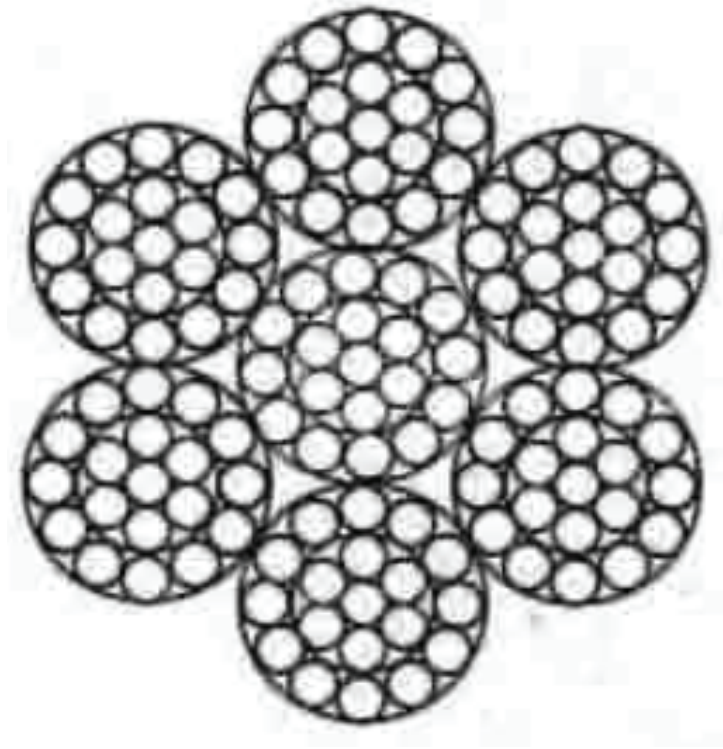
**TABLE XII-BREAKING LOAD AND MASS
OF 6 X 12 CONSTRUCTION**

Nominal Diameter + 6 percent -1 percent	Approximate Mass	Minimum Breaking Load Corresponding Tensile Designation of Wire of 1420 (N/mm ²)
(1) mm	(2) kg/100m	(3) kN
8	20.4	26
9	25.8	32
10	31.8	40
11	38.5	48
12	45.8	57
14	62.4	78
16	81.5	102
18	103	129
20	127	159
22	154	193
24	183	229
26	215	269
28	250	312
32	326	407
36	413	516
40	509	637



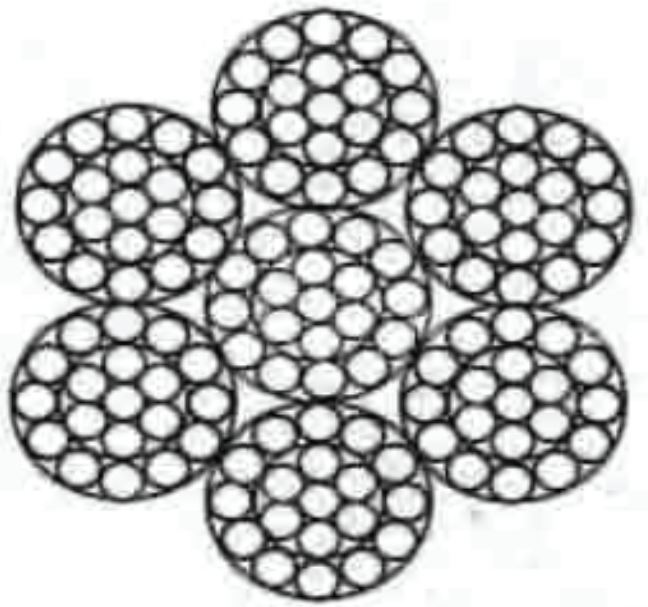
**TABLE XIII- BREAKING LOAD AND MASS FOR
8 X 19 (12/6 + 6F/1) FILLER CONSTRUCTION
WITH FIBRE CORE**

Nominal Diameter + 6 percent -1 percent	Approximate Mass	Minimum Breaking Load Corresponding Tensile Designation of Wire of 1420 (N/mm ²)		
(1) mm	(2) kg/100m	(3) kN	(4) kN	(5) kN
		1230	1420	1570
8	23.4	23	27	30
9	29.6	29	34	37
10	36.0	36	42	46
11	44.0	44	50	56
12	52.6	52	60	66
13	62.0	61	70	78
14	72.0	71	82	90
16	94.0	92	107	118



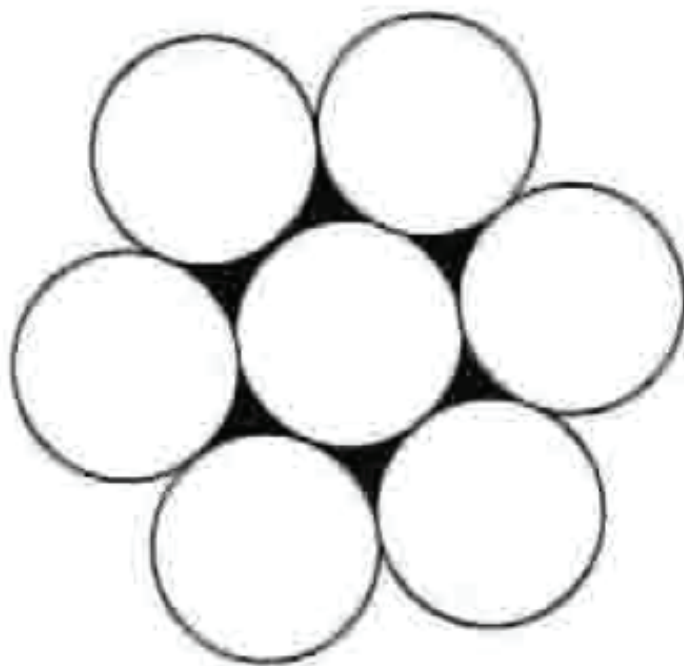
**TABLE XIV-BREAKING LOAD AND MASS
OF 7 X 19 CONSTRUCTION**

Nominal Diameter + percent -1 percent	Approximate Mass	Minimum Breaking Load Corresponding Tensile Designation of Wire of (N/mm ²)	
		1420	1570
(1) mm	(2) kg/100m	(3) kN	(4) kN
22	180	250	276
24	214	297	328
26	251	349	386
28	291	405	448
32	380	529	585
36	481	669	740
38	536	746	825
39	565	786	869
40	594	826	915
41	624	868	960
42	633	913	1010
43	687	958	1060
44	719	1003	1110
45	752	1049	1180
46	786	1094	1210
47	821	1139	1260
48	856	1193	1320



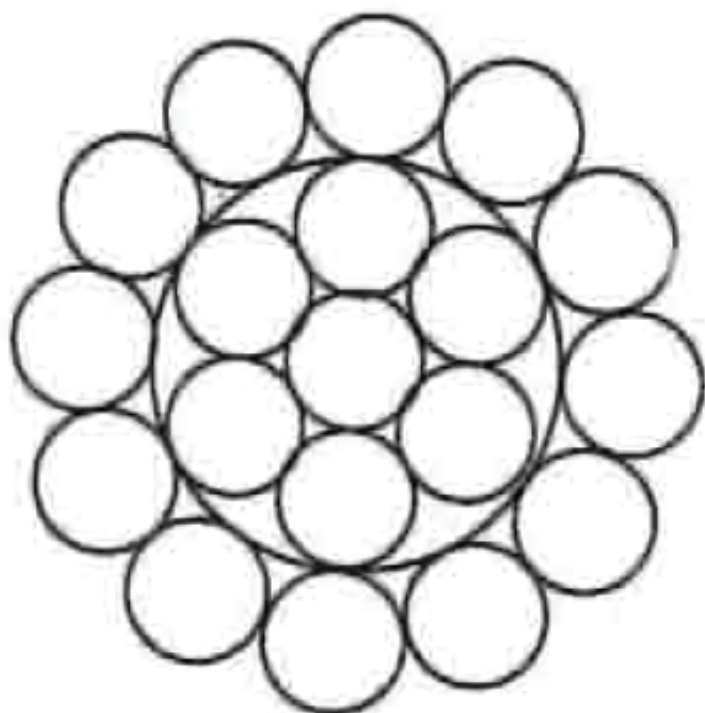
**TOBLE XV- ROUND STRAND 7X37(18/12/6/1)
CONSTRUCTION WIRE ROPES**

Nominal Diameter + 4 percent -1 percent	Approximate Mass	Minimum Breaking Load Corresponding to Tensile Designation of Wire	
		1420	1570
(1) mm	(2) kg/100 mm	(3) kN	(4) kN
38	536	709	784
39	565	756	826
40	594	786	869
41	624	825	913
42	633	866	958
43	687	904	1000
44	719	949	1050
45	752	994	1100
46	786	1040	1150
47	821	1085	1200
48	856	1130	1250
49	892	1175	1300
50	929	1229	13060
51	966	1275	1410
52	1010	1329	1470
53	1040	1383	1530
54	1080	1428	1580
55	1120	1483	1640
56	1170	1537	1700
57	1210	1591	1760
58	1250	1654	1830
59	1290	1709	1890
60	1340	1763	1950
61	1380	1826	2020
62	1430	1889	2090
63	1470	1994	2150
64	1520	2007	2220



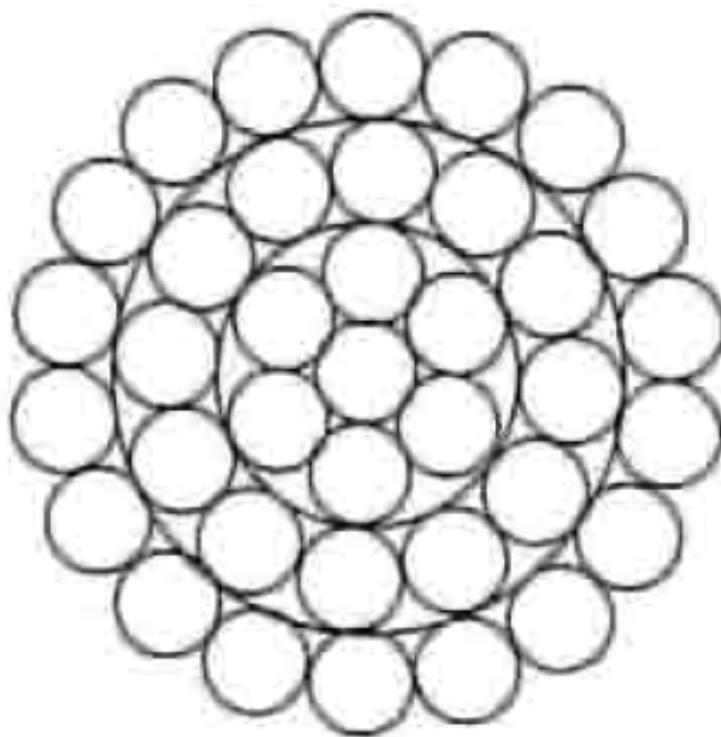
**TABLE XVI - BREAKING LOAD AND MASS
OF SPIRAL STRAND 7(6/1)WIRES**

Nominal Diameter + 6 percent -1 percent	Approximate Mass	Minimum Breaking Load Corresponding Tensile Designation of Wire of (N/mm ²)	
		1420	1570
(1) mm	(2) kg/100m	(3) kN	(4) kN
6	18.1	29	30.5
7	24.6	38	42.0
8	32.1	52	54.5
9	40.7	66	69.0
10	50.2	83	85.5
11	60.7	93	103
12	72.3	115	123
13	84.8	135	144
14	98.4	156	167
15	113	179	192



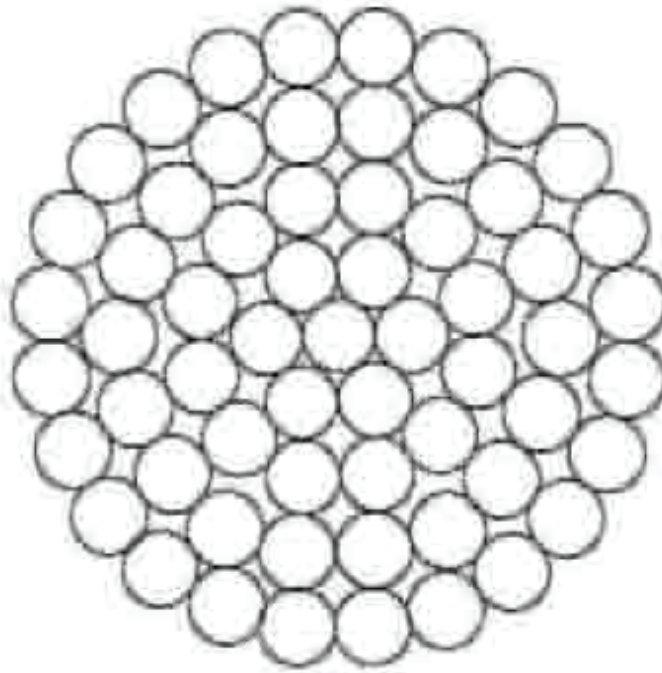
**TABLE XVII - BREAKING LOAD AND MASS
OF SPIRAL STRAND 19 (12/6/1) WIRES**

Nominal Diameter + 6 percent -1 percent	Approximate Mass	Minimum Breaking Load Corresponding Tensile Designation of Wire of (N/mm ²)	
		1420	1570
(1) mm	(2) kg/100m	(3) kN	(4) kN
12	71.5	105	119
13	84.0	125	130
14	97.0	145	162
15	111	168	186
16	127	188	211
17	143	207	238
18	161	232	267
19	179	260	298
20	198	288	330
21	218	317	364
22	240	348	399
23	262	381	436
24	285	414	475
25	309	450	516



**TABLE XVII - BREAKING LOAD AND MASS
OF SPIRAL STRAND 37 (18/12/6/1) WIRES**

Nominal Diameter + 6 percent -1 percent	Approximate Mass	Minimum Breaking Load Corresponding Tensile Designation of Wire of (N/mm ²)	
		1420	1570
(1) mm	(2) kg/100m	(3) kN	(4) kN
20	196	265	321
21	216	304	365
22	237	333	390
23	259	365	426
24	282	372	464
25	306	404	503
26	331	437	543
27	356	465.5	587
28	383	501	631
29	411	537	677
30	440	575	724
31	470	614	773
32	501	654	824
33	532	695	876
34	565	738	930
35	599	782	--



**TABLE XIX-SPORAL STRAND 61
(24/18/12/6/1)WIRES**

Nominal Diameter + 4 percent -1 percent	Approximate Mass	Minimum .Breaking Load Corresponding Tensile Designation of Wire of 1570
(1) mm	(2) kg/100m	(3) kN
26	334	540
27	360	580
28	387	625
29	415	670
30	445	717
31	475	765
32	506	817
33	538	868
34	571	921
35	605	977
36	640	1030
37	675	1090
38	713	1150
39	751	1200
40	790	1270
41	830	1330
42	871	1400
43	913	1470
44	956	1550
45	1000	1620

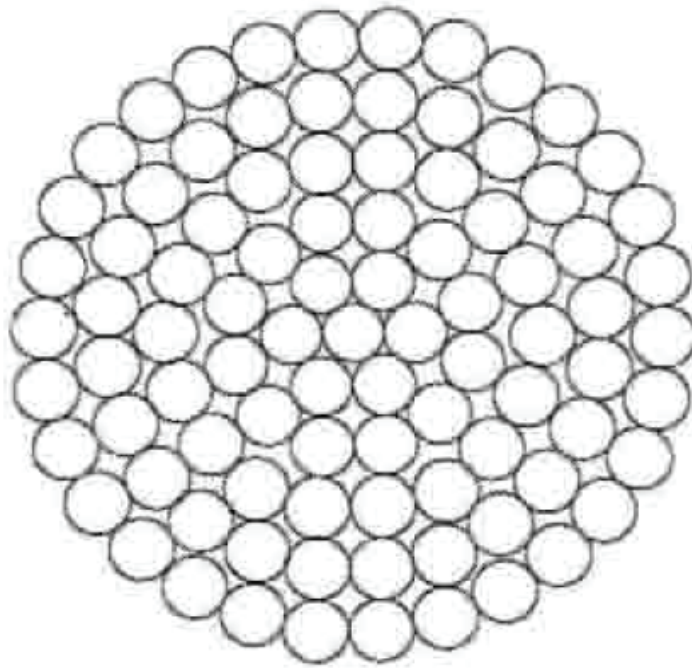
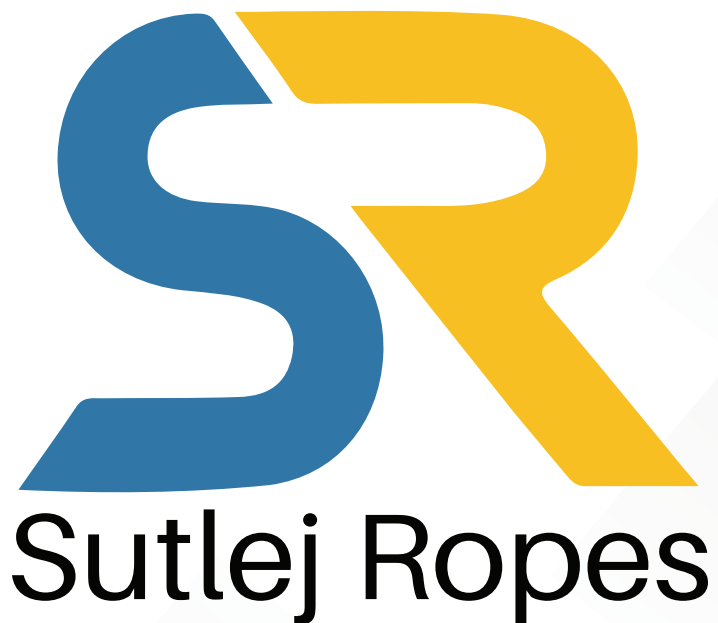


TABLE XX-SPIRAL STRAND 91
(30/24/18/12/6+6F/1)OR (30/24/18/12/6/1)WIRES

Nominal Diameter + 4 percent -1 percent	Approximate Mass	Minimum .Breaking Load Corresponding Tensile Designation of Wire of 1570
(1) mm	(2) kg/100m	(3) kN
33	538	868
34	571	921
35	605	977
36	640	1030
37	675	1090
38	713	1150
39	751	1200
40	790	1270
41	830	1330
42	871	1400
43	913	1470
44	956	1550
45	1000	1620
46	1040	1680
47	1090	1750
48	1140	1830
49	1190	1900
50	1240	1980
51	1280	2060
52	1340	2160
53	1390	2230
54	1440	2320
55	1490	2410
56	1550	2500



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