

# HYPER WIRE ROPES

For marine and offshore applications

**HYPER**<sup>®</sup>  
*the quality of steel*



EST. 1936

KATRADIS GROUP OF COMPANIES

**HYPER**<sup>®</sup>  
the quality of steel



EST. 1936  
KATRADIS GROUP OF COMPANIES

## LEADING PROVIDER OF WIRE ROPE SOLUTIONS

**Katradis Group is one of the leading manufacturers and suppliers of steel wire ropes. Since 1936 we have been supplying our customers worldwide with high-quality and a broad range of steel wire ropes, by serving different segments of the market, like the shipping and fishing industry, that comply with the requirements as set by ABS, API (American Petroleum Institute), DNV-GL and Lloyd's Register.**

**As safety is our first priority, we invest in higher quality raw materials, which is why our steel ropes excel in durability and reliability.**

**However, wire ropes are complex mechanical devices that have many moving parts all working in tandem to help support and move an object (lifting, hoisting) or a load (mooring, towing). Their unique design consists of multiple steel wires that form individual strands laid in a helical pattern around a core. This structure provides strength, flexibility, and the ability to handle bending stresses. Different configurations of the material, wire and strand structure will provide different benefits for the specific application, including:**

- Strength
- Flexibility
- Abrasion resistance
- Crushing resistance
- Fatigue resistance
- Corrosion resistance





## STEEL WIRE ROPES

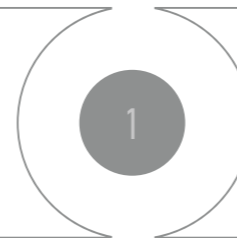
The Katradis Group supplies its clients worldwide a broad range of steel wire ropes for shipping, fishing and industrial applications that comply with the requirements set by ABS, API (American Petroleum Institute), DNV:GL and Lloyd's Register.

We offer a wide range of Steel Wire Ropes, covering the majority of requirements (common and specialized ones), destined for shipping, fishing and industrial purposes. Also wire rope sling fabrication is effected according to customers' requirements.

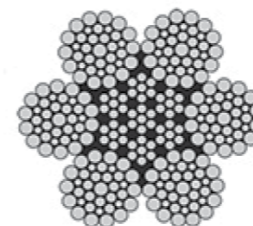
Our production line includes:  
6x7, 6x19, 6x24, 6x25, 6x36, 6x37,  
6x61, 19x7, 19x19, 35(W)x7, 35(W)xK7  
compacted, 4x36 compacted, 4x39 etc.

**HYPER**<sup>®</sup>  
the quality of steel

# STANDARD WIRE ROPES



## HYPERMAX 6S Class 6x36 WS Steel Core Wire Rope (IWRC)



Drawn galvanized standard wire rope (non rotation resistant with round wires), used in many applications eg, as cargo runner, hoisting, luffing, mooring, towing, anchoring etc.

Also suitable for fabrication of steel wire rope slings for lifting operations.

The independent wire rope core provides more strength and stability to the wire rope compared to fiber core. Parallel lay construction, long lifetime.

Strongly recommended by OCIMF for mooring of tanker, LNG & LPG vessels.

Construction according to **EN 12385** standard.

### Class 6x36

6x31WS+IWRC (1-6-6+6-12)

6x36WS+ IWRC (1-7-7+7-14)

6x41WS+ IWRC (1-8-8+8-16)

6x46WS+ IWRC (1-9-9+9-18)

6x49WS+ IWRC (1-8-8+8-16)

**Total number of strands:** 6

**Total number of wires:** 174-342

**Core type:** IWRC

**Outer wires number:** 72-108

**Outer strands number:** 6

**Lay type:** Regular lay

**Lay direction:** Right hand lay

**On request options:** Ungalvanized, left hand, greasing level, 2.160 grade.

### Technical Data

Nominal diameter	Approx. weight	Minimum breaking load	
		1.770N/mm <sup>2</sup>	1.960N/mm <sup>2</sup>
mm	Kg/m	kN	
12	0,589	90.7	100
14	0,802	124	137
16	1.050	161	179
18	1.330	204	226
20	1.640	252	279
22	1.980	305	338
24	2.360	363	402
26	2.760	426	472
28	3.210	494	547
30	3.700	570	631
32	4.190	645	715
34	4.750	731	810
36	5.300	817	904
38	5.920	914	1.012
40	6.540	1.010	1.120
42	7.230	1.115	1.235
44	7.920	1.220	1.350
46	8.670	1.335	1.480
48	9.420	1.450	1.610
50	10.260	1.575	1.750
52	11.100	1.700	1.890
54	11.950	1.840	2.040
56	12.800	1.980	2.190
58	13.750	2.125	2.350
60	14.700	2.270	2.510

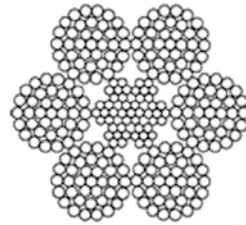
Nominal diameter	Approx. weight	Minimum Breaking Load
mm	Kg/m	kN
62	15,95	2.660
64	17,00	2.800
66	18,20	2.970
68	19,20	3.100
70	20,50	3.300
72	22,00	3.500
74	22,40	3.650
76	24,00	3.800
78	25,30	4.000
80	27,00	4.200



2

## HYPERSIX S

### 6x37 Standard Steel Core Wire Rope (IWRC)



Drawn galvanized standard wire rope (non rotation resistant with round wires), used in many applications eg, as cargo runner, hoisting, luffing, mooring, towing, anchoring etc. Also suitable for fabrication of steel wire rope slings for lifting operations.

The independent wire rope core provides more strength and stability to the wire rope compared to fiber core.

Very flexible.

Construction according to DIN 3066 standard (1+6+12+18).

#### Technical Data

Nominal diameter	Approx. weight	Minimum breaking load	
		1.770N/mm <sup>2</sup>	1.960N/mm <sup>2</sup>
mm	Kg/m	kN	
4,50	0,077	11,4	12,7
5,00	0,095	14,1	15,6
6,00	0,13	20,3	22,5
7,00	0,18	27,6	30,6
8,00	0,24	36,1	40,0
9,00	0,30	45,7	50,6
10,00	0,38	56,4	62,5
11,00	0,46	68,2	75,5
12,00	0,54	81,2	89,9
13,00	0,64	95,2	105,4
14,00	0,74	110	122
15,00	0,86	127	141
16,00	0,97	144	159
17,00	1,10	164	182
18,00	1,23	183	203
19,00	1,37	204	226
20,00	1,52	225	249
21,00	1,68	249	276
22,00	1,84	273	302
23,00	2,01	299	331
24,00	2,19	325	360
25,00	2,38	353	391
26,00	2,57	381	422
27,00	2,77	412	456

**Total number of strands:** 6

**Total number of wires:** 271

**Core type:** IWRC

**Outer wires number:** 108

**Outer strands number:** 6

**Lay type:** Regular lay

**Lay direction:** Right hand lay

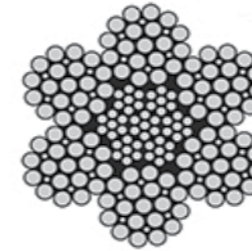
**On request options:** Ungalvanized, left hand, greasing level.

Nominal diameter	Approx. weight	Minimum breaking load	
		1.770N/mm <sup>2</sup>	1.960N/mm <sup>2</sup>
mm	Kg/m	kN	
28,00	2,98	442	489
30,00	3,44	510	565
32,00	3,90	577	639
34,00	4,42	654	724
35,00	4,67	692	766
36,00	4,93	730	808
38,00	5,51	816	904
40,00	6,09	902	999
42,00	6,73	996	1.103
44,00	7,37	1.090	1.207
45,00	7,72	1.143	1.266v
46,00	8,07	1.195	1.323
47,00	8,42	1.248	1.382
48,00	8,77	1.300	1.440
50,00	9,53	1.410	1.561
51,00	9,91	1.465	1.622
52,00	10,3	1.520	1.683
54,00	11,1	1.645	1.822
55,00	11,5	1.708	1.891
56,00	11,9	1.770	1.960
57,00	12,3	1.835	2.032
58,00	12,8	1.900	2.104
59,00	13,2	1.965	2.176
60,00	13,7	2.030	2.248

3

## HYPERLIFT 6S

### Class 6x19 Steel Core Wire Rope (IWRC)



Standard wire rope. Mainly used for elevators and fishing operations.

Construction according to EN 12385 standard.

#### Class 6x19

6x19 S+ IWRC (1-9-9)

6x19W+IWRC (1-6-6+6)

6x25F+IWRC (or 6x19F+IWRC) (1-6-6F-12)

6x26WS+IWRC (1-5-5-5-10)

**Total number of strands:** 6

**Total number of wires:** 90 - 156

**Core type:** IWRC

**Outer wires number:** 54 - 72

**Outer strands number:** 6

**Lay type:** Regular lay

**Lay direction:** Right hand lay

**On request options:** Galvanized/ungalvanized, left hand, greasing level.



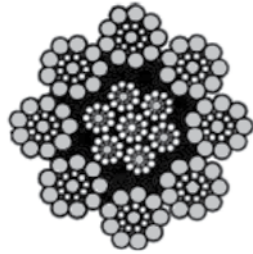
#### Technical Data

Nominal diameter	Approx. weight	Minimum breaking load	
		1.770N/mm <sup>2</sup>	1.960N/mm <sup>2</sup>
mm	Kg/m	kN	
6,00	0,144	22,7	25,1
7,00	0,196	30,9	34,2
8,00	0,256	40,3	44,7
9,00	0,324	51,0	56,5
10,00	0,400	63,0	69,8
11,00	0,484	76,2	84,4
12,00	0,576	90,7	100,4
13,00	0,676	106	118
14,00	0,784	124	137
15,00	0,902	143	158
16,00	1,020	161	179
17,00	1,16	183	203
18,00	1,30	204	226
19,00	1,45	228	252
20,00	1,60	252	279
21,00	1,77	279	309
22,00	1,94	305	338
24,00	2,30	363	402
25,00	2,50	395	437
26,00	2,70	426	472
27,00	2,92	460	509
28,00	3,14	494	547
29,00	3,38	532	589
30,00	3,62	570	631
32,00	4,10	645	715
34,00	4,64	731	809
35,00	4,91	774	857
36,00	5,18	817	904
38,00	5,79	914	1.012
40,00	6,40	1.010	1.120
42,00	7,07	1.115	1.235
44,00	7,74	1.220	1.350

4

## HYPERLIFT 8S

### Class 8x19 Steel Core Wire Rope



Standard wire rope. Used mainly on elevators.  
Construction according to the EN 12385 standard.

#### Class 8x19

8x19 S + IWRC (1-9-9)  
8x19W+IWRC (1-6-6+6)  
8x25F+IWRC (1-6-6F+12)  
8x26WS+IWRC (1-5-5+5-10)

**Total number of strands:** 8  
**Total number of wires:** 152-208  
**Core type:** IWRC  
**Outer wires number:** 72-96  
**Outer strands number:** 8  
**Lay type:** Regular lay  
**Lay direction:** Right hand lay

**On request options:** Galvanized/ungalvanized,  
left hand, dual tensile, greasing level.

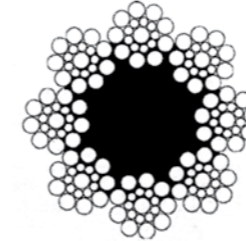
#### Technical Data

Nominal diameter	Approx. weight	Minimum breaking load			
		1.370 - 1.770N/mm <sup>2</sup>	1.570N/mm <sup>2</sup>	1.770N/mm <sup>2</sup>	1.960N/mm <sup>2</sup>
mm	Kg/m	kN			
8,00	0,260	35,8	35,7	40,3	44,7
9,00	0,330	45,3	45,2	51,0	56,5
10,00	0,407	55,9	55,9	63,0	69,8
11,00	0,492	67,6	67,6	76,2	84,4
12,00	0,586	80,5	80,5	90,7	100
13,00	0,688	94,5	94	106	118
14,00	0,798	110,0	110	124	137
15,00	0,919	126,0	127	143	158
16,00	1,04	143,0	143	161	179
17,00	1,18		162	183	203
18,00	1,32		181	204	226
19,00	1,47		202	228	253
20,00	1,63		224	252	279
22,00	1,97		271	305	338
24,00	2,34		322	363	402
26,00	2,75		378	426	472
27,00	2,97		408	460	509
28,00	3,19		438	494	547
29,00	3,43		472	532	589
30,00	3,68		506	570	631
32,00	4,17		572	645	715

5

## HYPERLIFT 8F

### Class 8x19 Fiber Core Wire Rope



Standard wire rope. Used mainly on elevators.  
Construction according to the EN 12385 standard.

#### Class 8x19

8x19 S + FC (1-9-9)  
8x19W+FC (1-6-6+6)  
8x25F+FC (1-6-6F+12)  
8x26WS+FC (1-5-5+5-10)

**Total number of strands:** 8  
**Total number of wires:** 152-208  
**Core type:** FIBER  
**Outer wires number:** 72-96  
**Outer strands number:** 8  
**Lay type:** Regular lay  
**Lay direction:** Right hand lay

**On request options:** Galvanized/ungalvanized,  
left hand, dual tensile, greasing level.

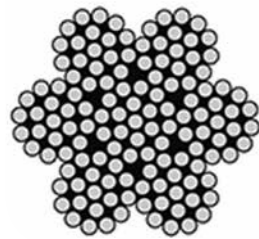
#### Technical Data

Nominal diameter	Approx. weight	Minimum breaking load			
		1.370 - 1.770N/mm <sup>2</sup>	1.570N/mm <sup>2</sup>	1.770N/mm <sup>2</sup>	1.960N/mm <sup>2</sup>
mm	Kg/m	kN			
8,00	0,218	28,1	29,4	33,2	36,8
9,00	0,275	35,6	37,3	42,0	46,5
10,00	0,340	44,0	46	51,9	57,4
11,00	0,411	53,2	55,7	62,8	69,5
12,00	0,490	63,3	66,3	74,7	82,7
13,00	0,575	74,3	77,7	87,6	97,1
14,00	0,666	86,1	90	102	113
15,00	0,768	98,9	105	118	130
16,00	0,870	112,5	118	133	147
17,00	0,985		134	151	167
18,00	1,100		149	168	186
19,00	1,230		167	188	208
20,00	1,36		184	207	230
22,00	1,65		223	251	278
24,00	1,96		265	299	331
26,00	2,30		311	351	388
27,00	2,48		336	379	419
28,00	2,67		361	407	450
29,00	2,87		389	438	485
30,00	3,07		416	469	519
32,00	3,48		471	531	588

6

## HYPERLINE S

### 6x19 Standard Steel Core Wire Rope (WSC/IWRC)



Standard wire rope.

Mainly used as auxiliary wire or seizing wire.

Construction according to DIN 3060 standard (1+6+12).

**Total number of strands:** 6

**Total number of wires:** 114

**Type of core:** WSC / IWRC

**Outer wires number:** 12

**Outer strands number:** 6

**Type of lay:** Regular lay

**Direction of lay:** Right hand lay

**On request options:** Galvanized/ungalvanized, left hand, greasing level.

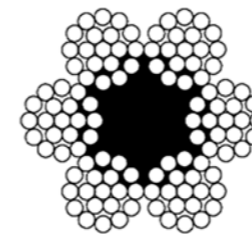
#### Technical Data

Nominal diameter	Approx. weight	Minimum breaking load	
		1.770N/mm <sup>2</sup>	1.960N/mm <sup>2</sup>
mm	Kg/m	kN	
3	0,0342	5,29	5,86
4	0,0609	9,40	10,4
5	0,0952	14,7	16,3
6	0,138	21,2	23,5
7	0,187	28,8	31,9
8	0,243	37,6	41,6
9	0,308	47,6	52,7
10	0,381	58,8	65,1
11	0,461	71,1	78,7
12	0,548	84,6	93,7
13	0,643	99,3	110
14	0,746	115	127
16	0,974	150	166
18	1,23	190	210
20	1,52	235	260
22	1,84	284	314
24	2,19	338	374
26	2,57	397	440
28	2,98	461	510
32	3,90	602	667
36	4,93	761	843
40	6,09	940	1.041
44	7,37	1.140	1.262
48	8,77	1.350	1.495
52	10,3	1.590	1.761
56	12,0	1.840	2.038

7

## HYPERLINE F

### 6x19 Standard Fiber Core Wire Rope



Standard wire rope.

Mainly used as auxiliary wire or seizing wire.

Construction according to DIN 3060 standard (1+6+12).

**Total number of strands:** 6

**Total number of wires:** 114

**Core type:** FIBER

**Outer wires number:** 12

**Outer strands number:** 6

**Lay type:** Regular lay

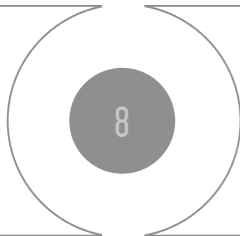
**Lay direction:** Right hand lay

**On request options:** Galvanized/ungalvanized, left hand, greasing level.

#### Technical Data

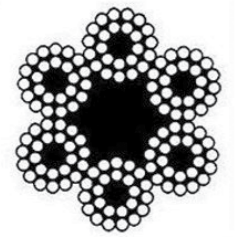
Nominal diameter	Approx. weight	Minimum breaking load	
		1.770N/mm <sup>2</sup>	1.960N/mm <sup>2</sup>
mm	Kg/m	kN	
3	0,0311	4,90	5,43
4	0,0554	8,70	9,63
5	0,0865	13,6	15,1
6	0,125	19,6	21,7
7	0,170	26,7	29,6
8	0,221	34,8	38,5
9	0,280	44,1	48,8
10	0,346	54,4	60,2
11	0,419	65,8	72,9
12	0,498	78,3	86,7
13	0,585	91,9	102
14	0,678	107	118
16	0,886	139	154
18	1,12	176	195
20	1,38	218	241
22	1,67	263	291
24	1,99	313	347
26	2,34	368	408
28	2,71	426	472
32	3,54	557	617
36	4,48	705	781
40	5,54	870	963
44	6,70	1.050	1.163
48	7,97	1.250	1.384
52	9,36	1.470	1.628
56	10,9	1.710	1.894





# ULTRAFLEX

## 6x24 + 7 Fiber Core Wire Rope



Drawn galvanized standard wire rope. Used mainly for log lashing. A low breaking strength rope but very flexible due to the 7 fiber cores, however, flattening will occur when bent.

Short lifetime. Moderate abrasion resistant.

Construction according to DIN 3068 standard (9+15).

**Total number of strands:** 6

**Total number of wires:** 144

**Core type:** FIBER

**Outer wires number:** 90

**Outer strands number:** 6

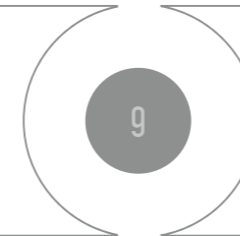
**Lay type:** Regular lay

**Lay direction:** Right hand lay

**On request options:** Ungalvanized, left hand, greasing level.

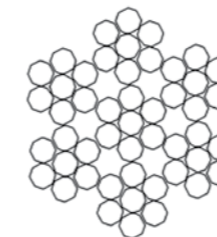
### Technical Data

Nominal diameter	Approx. weight	Minimum breaking load	
		1.770N/mm <sup>2</sup>	1.960N/mm <sup>2</sup>
mm	Kg/m	kN	
6	0,115		17,9
7	0,156		24,3
8	0,204	28,2	
9	0,258	35,6	
10	0,318	44,0	
11	0,385	53,2	
12	0,458	63,3	
13	0,538	74,3	
14	0,624	86,2	
16	0,815	113	
18	1,030	143	
20	1,270	176	
22	1,540	213	
24	1,830	253	
26	2,150	297	
28	2,500	345	
32	3,260	450	
36	4,130	570	
40	5,090	704	
44	6,160	851	
48	7,340	1.010	
52	8,610	1.190	
56	9,990	1.380	



# HYPERMARE S

## 6x7 Steel Core Wire Rope



Drawn galvanized standard wire rope. Mainly used in small diameters. Applications include stay wire, release wire and fishing operations. Construction according to **EN standard 12385**.

Metallic core can be either WSC (same construction as the strand) or IWRC (which is more flexible).

Heavy galvanized option is also available upon request.

**Quality:** Galvanized

**Tensile strength:** 1570 /1770 /1960 N/mm<sup>2</sup>

**Total number of strands:** 7

**Total number of wires:** 49

**Type of core:** WSC

**Outer wires number:** 36

**Outer strands number:** 6

**Type of lay:** Regular lay

**Direction of lay:** Right hand lay

**On request options:** Heavy galvanized, ungalvanized, left hand, IWRC core, greasing level.

### Technical Data

Nominal diameter	Approx. weight	Minimum breaking load		
		1.570N/mm <sup>2</sup>	1.770N/mm <sup>2</sup>	1.960N/mm <sup>2</sup>
mm	Kg/m	kN		
7,00	0,188	27,60	31,1	34,5
8,00	0,246	36,10	40,7	45,0
9,00	0,311	45,70	51,5	57,0
10,00	0,384	56,30	63,5	70,4
11,00	0,465	68,20	76,9	85,1
12,00	0,553	81	91,5	101
13,00	0,649	95	107	119
14,00	0,753	111	125	138
15,00	0,868	128	144	159
16,00	0,983	145	163	180
17,00	1,115	163	184	204
18,00	1,240	183	206	228
19,00	1,390	204	230	255
20,00	1,540	225	254	281

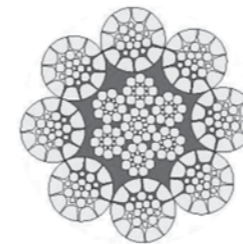




# COMPACTED WIRE ROPES

10

## HYPERSTRONG 8C 8strand Compacted Wire Rope



### Compacted - 8-Strand - Inner Plastified Wire ropes

This wire rope belongs in the non rotation resistant classification but its strands are compacted and it is used mainly as luffing wire rope on high efficiency ship & harbour mobile cranes, container bridge cranes, overhead travelling hoists, mineral loading cranes. It is an 8-strand construction, very flexible and suitable for use on many crane brands installed on board.

These wire ropes are usually produced as drawn galvanized and internally and externally lubricated, which makes them corrosion resistant and durable against the various harsh marine environment factors. Additionally, these ropes are produced with an extruded inner plastic layer, which ensures water impermeability and elimination of point contact between wires & strands of the inner and outer layers. This extra protection from corrosion and inner contact, prolongs the useful service life of the ropes. Attention must be paid in the installation of the new rope on board, its running-in (bedding in) period and load and the inspection before and after every usage. Diligent production processes, raw material selection and quality control in all stages of production ensure a long and trouble free service life. Compacting technology reduces the size and increases the breaking strength.

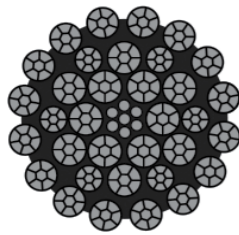
### Main advantages

- Extremely resistant & flexible 8-strand ordinary lay or Lang's lay rope with inner plastification, suited as luffing & hoisting rope.
- Long service life due to inner plastification and reduced rope abrasion, resulting from the smooth rope surface, also exhibiting excellent flexural fatigue properties
- Resistance against corrosion due to galvanized wires, the permanent lubrication and inner plastification
- Reliability and safety in operation as a result of the highest breaking forces, especially provided by the compaction technology
- Exceptional resistance against shock loads and vibrations due to the radial & elastic structured rope and inner plastification
- Optimal spooling characteristics due to high resistance against radial deformations
- Reduced maintenance effort due to intensive lubrication in each production step
- Trouble-free operation

### Technical Data

Nominal diameter	Approx. weight	Minimum breaking load		
		1.770N/mm <sup>2</sup>	1.960N/mm <sup>2</sup>	2.160N/mm <sup>2</sup>
mm	Kg/m	kN		
10	0,46	79	87	96
11	0,55	95	105	115
12	0,69	114	126	139
13	0,81	137	152	168
14	0,93	159	176	194
15	1,06	182	201	222
16	1,20	206	229	252
17	1,35	233	258	284
18	1,55	260	288	318
19	1,71	294	326	359
20	1,89	324	359	395
21	2,15	363	401	442
22	2,34	396	439	484
23	2,54	433	480	529
24	2,75	462	512	564
25	2,97	508	562	620
26	3,19	546	605	667
27	3,51	588	651	717
28	3,76	640	708	781
28,6	3,90	659	730	804
29	4,03	682	755	832
30	4,30	740	819	903
32	4,90	842	932	1.027
34	5,59	936	1.036	1.142
36	6,26	1.055	1.168	1.287
38	6,96	1.195	1.323	1.458
40	7,71	1.312	1.453	1.601
42	8,45	1.449	1.604	1.768
44	9,27	1.573	1.742	1.920

## HYPERFLEX C 35(W)xK7 Compacted Wire Rope



### Fully compacted - 16 outer strands - 1960 Grade

The 35(W)xK7 Compacted wire rope belongs in the multi strand, rotation resistant classification but its strands are compacted and is used as hoisting wire rope.

It is very flexible, 3-layer construction and is suitable for use on European crane brands. Most common lay is the Lang's lay, for multi layer spooling on the winch drum. 2160 tensile strength is also available upon request.

These ropes are usually produced as drawn galvanized and internally & externally lubricated, which makes them corrosion resistant and durable against the various harsh marine environment factors.

Optionally, these ropes are inner plastified for additional protection against corrosion as the inner core is kept greased and is unaffected by the environmental factors that degrade the rope and reduce its useful service life. Inner plastification adds to safety standards as inspection is very difficult for the inner part of the rope, improves the fatigue life, shows greater resistance to drum crushing, is more abrasion resistant and shows reduced interstrand nicking.

Diligent production processes, raw material selection and quality control in all stages of production ensure a long and trouble free service life.

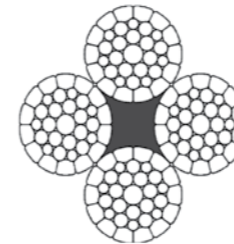
Attention must be paid on the installation of the new rope on board, its running-in (bedding in) period and load and the inspection before and after every usage.

Compacting technology reduces the size and increases the breaking strength.

### Technical Data

Nominal diameter	Approx. weight	Minimum breaking load 1.960N/mm <sup>2</sup>
mm	Kg/m	kN
12	0,74	133
13	0,86	155
14	1,00	180
15	1,15	215
16	1,30	244
18	1,70	309
19	1,85	345
20	2,10	375
21	2,25	414
22	2,50	450
23	2,77	490
24	2,95	530
25	3,15	590
26	3,50	620
27	3,75	670
28	4,08	720
29	4,30	775
30	4,65	830
32	5,55	940
34	5,95	1.050
36	6,70	1.180
38	7,08	1.250
40	7,85	1.380

## HYPERFORCE 4C 4xK36WS Fiber Core Compacted Wire Rope



Rotation resistant hoisting wire rope.

High breaking strength with compacted strands.

Excellent resistant to abrasion and crushing on multi layer drum spooling.

Easier for handling, installation.

For tough / harsh working conditions.

Note : Use of swivel is not recommended for these 4 stranded ropes

### Applications:

Applications which demand a tough rope and at the same time rotation resistant characteristics.

EOT cranes with high lifting height.

Bulk ship unloader cranes with grabs.

Heavy duty construction equipment like pile drivers.

Special ropes for suspended platform hoists, pulling winches and mobile crane hoists.

### Technical Data

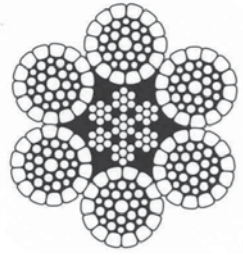
Nominal diameter	Approx. weight	Minimum breaking load 1.960N/mm <sup>2</sup>
mm	Kg/m	kN
20	1,71	344
22	2,07	416
24	2,47	495
26	2,89	582
28	3,36	674
30	3,85	774
32	4,38	881
34	4,95	994
36	5,55	1.104
38	6,18	1.226
40	6,85	1.358

\* Rope weights given are for guidance only



## HYPERSTRONG 6C

### 6xK36WS Compacted Steel Core Wire Rope (IWRC)



Drawn galvanized steel wire rope with compacted strands (non rotation resistant), used in many applications eg, as cargo runner, hoisting, luffing, mooring, towing, anchoring etc.

Also suitable for fabrication of steel wire rope slings for lifting operations.

The independent wire rope core provides more strength and stability to the wire rope compared to fiber core. Parallel lay construction, long lifetime.

Construction in general according to EN 12385 standard but with compacted strands execution.

**Total number of strands:** 6

**Total number of wires:** 216 + 49

**Core type:** IWRC

**Outer wires number:** 84

**Outer strands number:** 6

**Lay type:** Regular lay

**Lay direction:** Right hand lay

**On request options:** Ungalvanized, left hand, greasing level, 2160 grade.

Compacting process has many advantages on rope's & equipment's performance & lifetime (increased resistance to drum crushing, corrosion, shock loading etc).

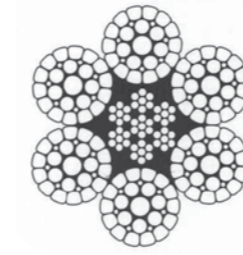
Additional cost savings occur due to longer lifetime, reduced abrasion and maintenance on rope and equipment.

#### Technical Data

Nominal diameter	Approx. weight	Minimum breaking load 1.960N/mm <sup>2</sup>
mm	Kg/m	kN
6,0	0,17	30,9
6,4	0,19	34,7
7,9	0,28	53,3
8,0	0,29	53,8
9,0	0,37	65,5
9,5	0,41	78,3
10,0	0,45	84
11,0	0,55	102
11,1	0,56	106
12,0	0,65	122
12,7	0,73	136
14,0	0,89	167
14,3	0,93	172
16,0	1,16	210
18,0	1,47	267
19,0	1,64	301
20,0	1,82	335
22,0	2,20	402
22,2	2,24	411
24,0	2,62	485
25,4	2,93	540
26,0	3,07	560
28,0	3,56	650
28,6	3,72	670
30,0	4,09	750
31,8	4,59	830
32,0	4,65	850
34,0	5,25	980
35,0	5,57	1.050
36,0	5,89	1.120

## HYPERSTRONG 6CFI

### 6xK29(Fi) Compacted Steel Core Wire Rope (IWRC)



Drawn galvanized steel wire rope with compacted strands (non rotation resistant), used in many applications eg, as cargo runner, hoisting, luffing, mooring, towing, anchoring etc.

Also suitable for fabrication of steel wire rope slings for lifting operations.

The independent wire rope core provides more strength and stability to the wire rope compared to fiber core. Parallel lay construction, long lifetime.

Construction in general according to EN 12385 standard but with compacted strands execution.

**Total number of strands:** 6

**Total number of wires:** 174 + 49

**Core type:** IWRC

**Outer wires number:** 84

**Outer strands number:** 6

**Lay type:** Regular lay

**Lay direction:** Right hand lay

**On request options:** Ungalvanized, left hand, greasing level, 2160 grade.

Compacting process has many advantages on rope's & equipment's performance & lifetime (increased resistance to drum crushing, corrosion, shock loading etc).

Additional cost savings occur due to longer lifetime, reduced abrasion and maintenance on rope and equipment.

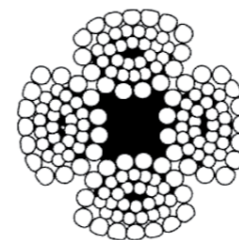
#### Technical Data

Nominal diameter	Approx. weight	Minimum breaking load 1.960N/mm <sup>2</sup>
mm	Kg/m	kN
6,0	0,17	30,9
6,4	0,19	34,7
7,9	0,28	53,3
8,0	0,29	53,8
9,0	0,37	65,5
9,5	0,41	78,3
10,0	0,45	84
11,0	0,55	102
11,1	0,56	106
12,0	0,65	122
12,7	0,73	136
14,0	0,89	167
14,3	0,93	172
16,0	1,16	210
18,0	1,47	267
19,0	1,64	301
20,0	1,82	335
22,0	2,20	402
22,2	2,24	411
24,0	2,62	485
25,4	2,93	540
26,0	3,07	560
28,0	3,56	650
28,6	3,72	670
30,0	4,09	750
31,8	4,59	830
32,0	4,65	850
34,0	5,25	980
35,0	5,57	1.050
36,0	5,89	1.120

# ROTATION RESISTANT WIRE ROPES

15

## HYPERFORCE 4 4x39 Fiber Core Wire Rope



### Rotation Resistant • 4 Strand

This is a 4-stranded rotation resistant rope mainly for use on Japanese crane brands.

It is supplied in drawn galvanized finish and fully lubricated for long service life.

Robust construction for many hours of usage on board. Tensile strength is minimum 1960 N/mm<sup>2</sup>.

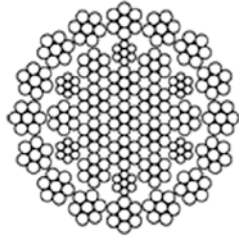
FC+4x(FC+9/15+15) - 4xSeS(39)+FC

### Technical Data

Nominal diameter	Approx. weight	Minimum breaking load 1.960N/mm <sup>2</sup>
mm	Kg/m	kN
8	0,257	44,3
9	0,326	56,1
10	0,402	69,2
12	0,579	96,5
12,5	0,628	108,9
14	0,788	136,3
16	1,03	177,5
18	1,30	225,6
19	1,45	251,1
20	1,61	277,5
22	1,95	335,4
22,4	2,02	348,1
24	2,32	385,4
25	2,51	432,5
26	2,72	466,8
28	3,15	543,3
30	3,62	623,7
31,5	4,05	687,5
32	4,20	709,0
33,5	4,60	777,7
34	4,79	801,2
35,5	5,20	872,8
36	5,30	897,3
37,5	5,78	973,8
38	5,90	999,3
40	6,60	1.078,7



## HYPERFLEX R 35(W)x7 Wire Rope



This wire rope belongs in the multi strand, rotation resistant classification and is used as hoisting wire rope.

It is very flexible, 3-layer construction and is suitable for use on many crane brands installed on board.

35(W)x7 ropes are usually produced as drawn galvanized and internally & externally lubricated, which makes them corrosion resistant and durable against the various harsh marine environment factors.

Construction according to the EN 12385 standard.

Diligent production processes, raw material selection and quality control in all stages of production ensure a long and trouble free service life.

Attention must be paid on the installation of the new rope on board, its running-in (bedding in) period and load and the inspection before and after every usage.

**Total number of strands:** 28-40

**Total number of wires:** 196 - 280

**Core type:** WSC

**Outer wires number:** 96

**Outer strands number:** 16

**Lay type:** Lang's lay

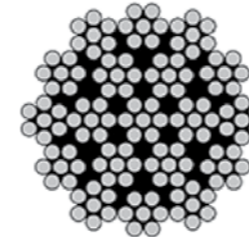
**Lay direction:** Right lang's lay

**On request options:** Ungalvanized, left Lang's lay, right & left hand ordinary lay, greasing level, 2160 grade.

### Technical Data

Nominal diameter	Approx. weight	Minimum breaking load	
		1.770N/mm <sup>2</sup>	1.960N/mm <sup>2</sup>
mm	Kg/m	kN	
10	0,454	63,8	70,6
11	0,549	77,1	85,4
12	0,654	92,1	102
13	0,767	108	119
14	0,890	125	138
15	1,025	145	160
16	1,160	164	181
18	1,470	207	229
19	1,645	231	256
20	1,820	255	282
21	2,010	282	312
22	2,200	309	342
24	2,620	367	406
26	3,070	431	477
28	3,560	500	553
30	4,105	576	638
32	4,650	653	723
34	5,265	740	819
36	5,880	826	914
38	6,560	921	1.020
40	7,260	1.021	1.130

## HYPERFLEX N 19x7 Wire Rope



The very basic rotation resistant wire rope, extensively used as hoisting rope for various cranes (provision cranes, hose cranes etc). Also used as life-boat falls.

Less flexible compared to 35(W)x7 but more abrasion resistant.

Its construction is according to EN 12385 standard.

**Class 18x7**

**Total number of strands:** 19

**Total number of wires:** 133

**Core type:** WSC

**Outer wires number:** 72

**Outer strands number:** 12

**Lay type:** Regular lay

**Lay direction:** Right hand lay

**On request options:** Galvanized/ungalvanized, left hand, greasing level.

### Technical Data

Nominal diameter	Approx. weight	Minimum breaking load	
		1.770N/mm <sup>2</sup>	1.960N/mm <sup>2</sup>
mm	Kg/m	kN	
7	0,196	28,4	31,5
8	0,257	37,2	41,1
9	0,325	47,0	52,1
10	0,401	58,1	64,3
11	0,485	70,2	77,8
12	0,577	83,6	92,6
13	0,678	98,1	109
14	0,786	114	126
15	0,908	131	146
16	1,030	149	165
17	1,165	168	187
18	1,300	188	208
19	1,450	210	233
20	1,600	232	257
22	1,940	281	311
24	2,310	334	370
25	2,510	363	403
26	2,710	392	435
28	3,140	455	504
30	3,610	523	579
32	4,110	594	658
34	4,640	671	743
36	5,200	752	833



## Quality

Since the foundation of the Katradis Group, ropes have been our mainline product.

With an 80-year experience in the ropes industry, the Katradis name has become synonymous with excellent quality ropes, supplied to the marine world by an efficient network of worldwide agents and distributors.

We offer a wide range of Rope Constructions & Custom Made Slings, covering the most common type of needs to the most specialized ones, destined for Shipping, Fishing and Industrial purposes.

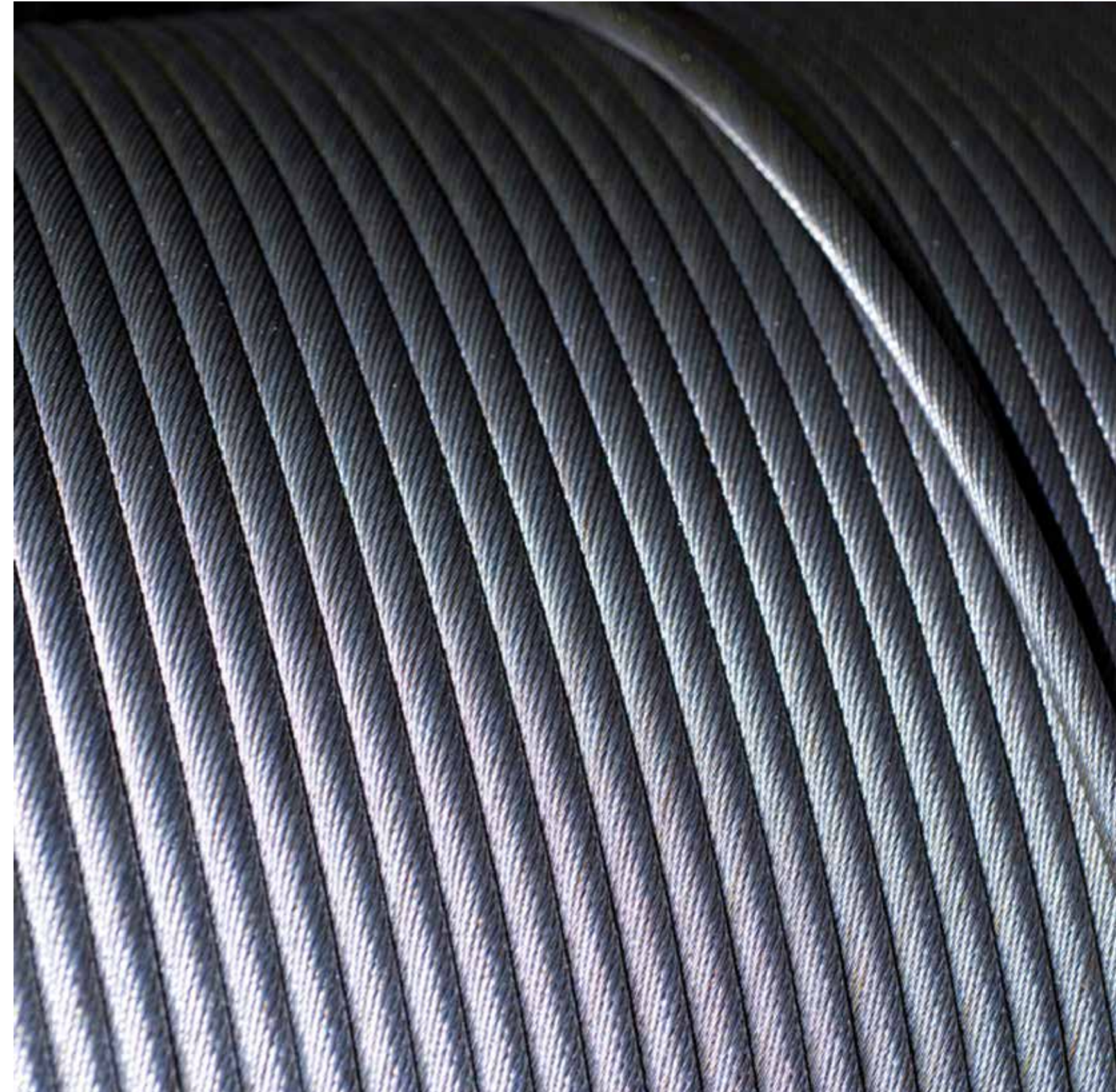
All ropes supplied by Katradis are very well preformed during all the stages of production, and free from internal stresses.

### **PREFORMED WIRE ROPES LAST LONGER because they have:**

- Greater resistance to fatigue
- Better distribution of the load among strands
- Greater flexibility
- Less tendency to kink
- Greater safety in handling because the wires that break after long wear do not protrude neither damage adjacent wires. Our wire ropes are mainly 1960N/mm<sup>2</sup> grade

## Certificates

- ISO 9001 LRQA
- LR Testing Establishment
- American Petroleum Institute
- CE Approval for Elevator Wire Ropes
- CE Approval for Wire Rope Production
- CE Approval for Wire Rope Slings
- Production Approval by Germanischer Lloyd
- ISO 9001 Germanischer Lloyd
- Production Approval by ABS
- Production Approval by LR



# COMPARATIVE TABLES



COMPARATIVE TABLE OF WEIGHTS & MIN. BREAKING LOADS OF CONVENTIONAL 6-STRAND & 8-STRAND WIRE ROPES

Diam		6x36WS+IWRC		6x37+IWRC		6x19 Class (IWRC)		8x19+WRC		6x19 Standard +IWRC						
Inch	mm	Weight Kg/m	M.B.L. kN	Weight Kg/m	M.B.L. kN	Weight Kg/m	M.B.L. kN	Weight Kg/m	M.B.L. kN	Weight Kg/m	M.B.L. kN					
		1.770 N/m <sup>2</sup>	1.960 N/m <sup>2</sup>	1.770 N/m <sup>2</sup>	1.960 N/m <sup>2</sup>	1.770 N/m <sup>2</sup>	1.960 N/m <sup>2</sup>	1.770 N/m <sup>2</sup>	1.960 N/m <sup>2</sup>	1.770 N/m <sup>2</sup>	1.960 N/m <sup>2</sup>					
1/4"	6			0,13	20,3	22,5	0,144	22,7	25,1			0,138	21,2	23,5		
9/32"	7			0,18	27,6	30,6	0,196	30,9	34,2			0,187	28,8	31,9		
5/16"	8			0,24	36,1	40	0,256	40,3	44,7	0,26	40,3	44,7	0,243	37,6	41,6	
11/32"	9			0,30	45,7	50,6	0,324	51	56,5	0,33	51	56,5	0,308	47,6	52,7	
3/8"	10			0,38	56,4	62,5	0,400	63	69,8	0,407	63	69,8	0,381	58,8	65,1	
7/16"	11			0,46	68,2	75,5	0,484	76,2	84,4	0,492	76,2	84,4	0,461	71,1	78,7	
15/32"	12	0,589	90,7	100	0,54	81,2	89,9	0,576	90,7	100,4	0,586	90,7	100	0,548	84,6	93,7
1/2"	13			0,64	95,2	105,4	0,676	106	118	0,688	106	118	0,643	99,3	110	
9/16"	14	0,802	124	137	0,74	110	122	0,784	124	137	0,798	124	137	0,746	115	127
	15			0,86	127	141	0,902	143	158	0,919	143	158				
5/8"	16	1,05	161	179	0,97	144	159	1,020	161	179	1,04	161	179	0,974	150	166
23/32"	18	1,33	204	226	1,23	183	203	1,30	204	226	1,32	204	226	1,23	190	210
3/4"	19			1,37	204	226	1,45	228	252	1,47	228	253				
	20	1,64	252	279	1,52	225	249	1,60	252	279	1,63	252	279	1,52	235	260
	22	1,98	305	338	1,84	273	302	1,94	305	338	1,97	305	338	1,84		314
15/16"	24	2,36	363	402	2,19	325	360	2,30	363	402	2,34	363	402	2,19	284	374
	26	2,76	426	472	2,57	381	422	2,70	426	472	2,75	426	472	2,57		440
1 1/8"	28	3,21	494	547	2,98	442	489	3,14	494	547	3,19	494	547	2,98	338	510
1 3/16"	30	3,70	570	631	3,44	510	565	3,62	570	631	3,68	570	631			
1 1/4"	32	4,19	645	715	3,90	577	639	4,10	645	715	4,17	645	715	3,90	602	667
1 3/8"	34	4,75	731	810	4,42	654	724	4,64	731	809						
1 13/32"	36	5,30	817	904	4,93	730	808	5,18	817	904				4,93	761	843
1 1/2"	38	5,92	914	1.012	5,51	816	904	5,79	914	1.012						
1 9/16"	40	6,54	1.010	1.120	6,09	904	999	6,40	1.010	1.120				6,09	940	1.041
1 5/8"	42	7,23	1.115	1.235	6,73	996	1.103	7,07	1.115	1.235						
1 3/4"	44	7,92	1.220	1.350	7,37	1.090	1.207	7,74	1.220	1.350				7,37	1.140	1.262
1 13/16"	46	8,67	1.335	1.480	8,07	1.195	1.323									
1 7/8"	48	9,42	1.450	1.610	8,77	1.300	1.440							8,77	1.350	1.495
2"	50	10,26	1.575	1.750	9,53	1.410	1.561									
2 1/8"	52	11,10	1.700	1.890	10,3	1.520	1.683							10,30	1.590	1.761
2 3/16"	54	11,95	1.840	2.040	11,1	1.645	1.822									
2 1/4"	56	12,80	1.980	2.190	11,9	1.770	1.960							12,00	1.840	2.038
2 3/8"	58	13,75	2.125	2.350	12,8	1.900	2.104									
2 13/32"	60	14,70	2.270	2.510	13,7	2.030	2.248									

COMPARATIVE TABLE OF WEIGHTS & MIN. BREAKING LOADS OF ROTATION RESISTANT WIRE ROPES (COMPACTED & CONVENTIONAL)

Diam		35(W)x7		35(W)xK7 Compacted		4x39+FC		4xK36WS+FC Compacted		19X7 (Class 18x7)				
Inch	mm	Weight Kg/m	M.B.L. kN	Weight Kg/m	M.B.L. kN	Weight Kg/m	M.B.L. kN	Weight Kg/m	M.B.L. kN	Weight Kg/m	M.B.L. kN			
		1.770 N/m <sup>2</sup>	1.960 N/m <sup>2</sup>	1.770 N/m <sup>2</sup>	1.960 N/m <sup>2</sup>	1.960 N/m <sup>2</sup>	1.960 N/m <sup>2</sup>	1.960 N/m <sup>2</sup>	1.960 N/m <sup>2</sup>	1.770 N/m <sup>2</sup>	1.960 N/m <sup>2</sup>			
3/8"	10	0,454	63,8	70,6				0,40	69,2			0,401	58,1	64,3
7/16"	11	0,549	77,1	85,4				0,49	82,9			0,485	70,2	77,8
15/32"	12	0,654	92,1	102	0,74	133	0,58	96,5				0,577	83,6	92,6
	13	0,767	108	119	0,86	155	0,68	116,4				0,678	98,1	109
9/16"	14	0,8A	125	138	1,00	180	0,79	136,3				0,786	114	126
	15	1,025	145	160	1,15	215	0,91	156,9				0,91	131	146
5/8"	16	1,16	164	181	1,30	244	1,03	177,5				1,03	149	165
23/32"	18	1,47	207	229	1,70	309	1,30	225,6				1,30	188	208
3/4"	19	1,65	231	256	1,85	345	1,45	251,1				1,45	210	233
	20	1,82	255	282	2,10	375	1,61	277,5	1,71	344	1,60	232	257	
	22	2,20	309	342	2,50	414	1,95	335,4	2,07	416	1,94	281	311	
15/16"	24	2,62	367	406	2,95	530	2,32	385,4	2,47	495	2,31	334	370	
	26	3,07	431	477	3,50	620	2,72	466,8	2,89	582	2,71	392	435	
	28	3,56	500	553	4,08	720	3,15	543,3	3,36	674	3,14	455	504	
1 3/16"	30	4,11	576	638	4,65	830	3,62	623,7	3,85	774	3,61	523	579	
	31,5	4,51	634	702	5,33	913	4,05	687,5			3,99	576	638	
	32	4,65	653	723	5,55	940	4,20	709,0	4,38	881	4,11	594	658	
	33,5	5,11	718	795	5,85	1.023	4,60	777,7			4,51	652	722	
1 3/8"	34	5,27	740	819	5,95	1.050	4,79	801,2	4,95	994	4,64	671	743	
	35,5	5,73	805	890	6,51	1.148	5,20	872,8			5,06	732	811	
1 13/32"	36	5,88	826	914	6,70	1.180	5,30	897,3	5,55	1104	5,20	752	833	
	37,5	6,39	897	994	6,99	1.233	5,78	973,8						
1 1/2"	38	6,56	921	1.020	7,08	1.250	5,90	999,3	6,18	1226				
1 9/16"	40	7,26	1.021	1.130	7,85	1.380	6,60	1.078,7	6,85	1358				





**COMPARATIVE TABLE OF WEIGHTS & MIN. BREAKING LOADS OF FISHING WIRE ROPES**

Diam		6x19 Class (IWRC)			6x7 (IWRC)		
Inch	mm	Weight Kg/m	M.B.L. kN		Weight Kg/m	M.B.L. kN	
			1770 N/m m <sup>2</sup>	1960 N/m m <sup>2</sup>		1770 N/m m <sup>2</sup>	1960 N/m m <sup>2</sup>
1/4"	6	0,144	22,7	25,1			
9/32"	7	0,196	30,9	34,2	0,188	31,1	34,5
5/16"	8	0,256	40,3	44,7	0,246	40,7	45,0
11/32"	9	0,324	51	56,5	0,311	51,5	57,0
3/8"	10	0,400	63	69,8	0,384	63,5	70,4
7/16"	11	0,484	76,2	84,4	0,465	76,9	85,1
15/32"	12	0,576	90,7	100,4	0,533	91,5	101
	13	0,676	106	118	0,649	107	119
9/16"	14	0,784	124	137	0,753	125	138
	15	0,902	143	158	0,868	144	159
5/8"	16	1,020	161	179	0,983	163	180
	17	1,16	183	203	1,115	184	204
23/32"	18	1,30	204	226	1,240	206	228
3/4"	19	1,45	228	252	1,390	230	255
	20	1,60	252	279	1,540	254	281

**COMPARATIVE TABLE OF WEIGHTS & MIN. BREAKING LOADS OF COMPACTED 6-STRAND & 8-STRAND WIRE ROPES**

Diam		6x36 WS+IWRC / 6x29+IWRC (Compacted)		8-Strand Compacted			
Inch	mm	Weight Kg/m	M.B.L. kN	Weight Kg/m	M.B.L. kN		
			1960 N/m m <sup>2</sup>		1770 N/m m <sup>2</sup>	1960 N/m m <sup>2</sup>	2160 N/m m <sup>2</sup>
	10	0,450	82,3	0,46	79	87	96
	11	0,55	99,6	0,55	95	105	115
	11,1	0,56	106				
15/32"	12	0,65	118	0,69	114	126	139
1/2"	12,7	0,73	136				
9/16"	14	0,89	165	0,93	159	176	194
5/8"	16	1,16	202	1,20	206	229	252
23/32"	18	1,47	256	1,55	294	326	359
	19	1,64	288	1,71	294	326	359
3/4"	20	1,82	315	1,89	324	359	395
	22	2,20	383	2,34	396	439	484
15/16"	24	2,62	454	2,75	462	512	564
1"	25,4	2,93	506				
	26	3,07	533	3,19	546	605	667
	28	3,56	610	3,76	640	708	781
1 1/8"	28,6	3,72	636	3,90	659	730	804
1 3/16"	30	4,09	710	4,30	740	819	903
1 1/4"	31,8	4,59	782				
	32	4,65	808	4,90	842	932	1.027
1 3/8"	34	5,25	912	5,59	936	1.036	1.142
	35	5,57	943				
1 13/32"	36	5,89	998	6,26	1.055	1.168	1.287

**TABLE OF APPLICATIONS OF STEEL WIRE ROPES**

	TOWING ROPES	OFFSHORE	MOORING LINES	ANCHOR LINES	RUNNERS	LASHING	SLINGS	STANDING RIGGING	RUNNING RIGGING	BOOM HOISTS	PREVENTERS	BOAT FALLS	WINCHES	CRANES	HOISTS	SAFETY ROPES	CRANE HOISTS	DERRICKS	TRAWL WARPS / FISHING	ELEVATOR ROPES	GUYS	
1x19								X														
6x7								X											X			
6x19		X					X		X										X	X	X	
6x24						X																
6X37IWRC			X	X					X		X		X									
6X25IWRC				X				X														
6X29IWRC				X	X						X			X		X						
6X26IWRC		X							X				X									
6X31IWRC									X				X	X								
6X36IWRC	X	X	X	X	X		X		X		X		X	X		X		X				
6X41IWRC	X		X	X	X				X		X		X	X		X		X				
6X19IWRC							X	X														X
6X75C								X												X		X
8X25										X												
8X19																					X	
35(W)X7												X		X	X		X					
35(W)XK7		X										X		X	X		X					
4XK36														X	X		X					
19X7												X		X	X		X					
8xK26WS										X				X	X							
6XK36WS+IWRC	X	X	X	X	X		X		X		X		X	X		X		X				
6XK29Fi+IWRC					X	X					X			X		X						



# WIRE ROPE LUBRICANTS

## Effective maintenance for your wire rope

### The important function of Lubricants

Wire ropes used in marine applications need proper maintenance during their service life, in order to perform well and efficient. Lubrication is a very important task of wire rope users, which can protect from weather effects (rust and deterioration) and increase the operational life of wire ropes.

### What does a lubricant do?

- Reduces the friction coefficient among the individual wires when moving internally during operation.
- Protects from moisture which normally causes oxidation and corrosion.



### Pressure lubricator is recommended for efficient application of grease

The lubricator system provides a continuous stream of atomized oil. The lubricant is inserted into the wire rope structure under control, so the user can set the effective drip-rate of the oil upon the wire rope.

This method is the best practice for lubricating while also cost-saving due to specific adjustment of the needed grease and shorter labor times.



### VGP Compliant Lubricants

The Vessel General Permit (VGP) regulation indicates that every oil-to-sea interface has to use an Environmentally Accepted Lubricant (EAL). This ensures that the used product is:

- **Biodegradable** – a lubricant is “readily biodegradable” if it is more than 60% biodegraded in 28 days.
- **Non bio-accumulative** Bioaccumulation is the build-up of foreign chemicals within the tissues of a living organism over time.
- **Minimally toxic** – It is measured by the concentration in parts per million or milligrams per liter of lubricant that affects specific test species.

# THE FEATURES OF EFFECTIVE LUBRICANT

## Operational Temperature Range

The proper lubricant for marine wire ropes must have resistance to constantly changing temperature conditions. Conventional greases that do not perform well in various temperatures, may drip easily in hot climates leaving the wire exposed.

A wide and effective operational range is from  $-25^{\circ}\text{C}$  up to  $+140^{\circ}\text{C}$ .

## Washing off Resistance

The ability of the grease to resist washing off and remain upon the wire rope when subjected to wet conditions (for e.g. rain, sea etc.), is usually measured acc. to ASTM D1264. Values below 2% are indicated for good performance of the grease in terms of washing off resistance.

## Corrosion Resistance

Determining the resistance against corrosion is essential for the good maintenance and long service life of the wire ropes. Salt spray testing has long been the standardized corrosion test method and indicates the time period at which there is initial appearance of corrosion products (rust).

## Internal viscosity of semi-fluid grease

This feature represents the lubricant's capability to penetrate easy into the wire rope structure. According to the NLGI (National Lubricating Grease Institute), the standardized grade of 0 to 000 is less stiff than others and is beneficial for wire ropes.



# MOORING TAILS

## Which mooring tails are appropriate for your application?

Get in touch with our experts who will help you select the best suitable mooring tails based on your requirements. The basic considerations when selecting a specific material, construction, length and size of mooring tail are the following:

### The desired elasticity

NIKA-Nylon mooring tails exhibit the highest elongation properties amongst synthetic marine ropes, which makes this tail type ideal for reducing the dynamic loads that are introduced during mooring operations. NIKA-Nylon tails of 22m length are recommended for operations at exposed terminals where shock loads are more frequent.

Medium to high elasticity is expected by other types of mooring tails (Mixed Polyester/ Nikasteel® and 100% Polyester respectively).

### Floating or Non-floating

IMPROVED Mixed Nikasteel® tails are floating in seawater and are highly recommended for towing operations (use in tugboats). NIKA-Polyester, NIKA-Nylon and NIKA-Flex tails are non-floating.

### The type of mooring berth (s)

For open berths we recommend 22m length tails made from Nylon for better cyclic loading response of the mooring lines which can result in increased service life.

In sheltered ports, 11m length tails are the most commonly used, however 22m length tails can also be an alternative.

As per MEG4 (Mooring Equipment Guidelines, 4th edition, OCIMF), mooring tails should have TDBF (Tail Design Break Force, wet condition) that is 25%-30% higher than the MBLSD ship (design MBL).

### The ease of handling and the potential need for re-splicing.

The construction of 8-Strand braided Tails is easier & faster to re-splice.

Floating tails (such as IMPROVED Mixed NIKA-Steel® tails) are lighter and are considered easier to handle due to lower weight (35% – 40% lighter when compared with 100% Polyester tails).

There are two basic types of Mooring tails. The single leg and the grommet type:

### Single leg

Single leg tails are the most common type of tails used in a variety of applications (mooring, towing etc.) This construction has standard two soft eyes, one of 1,8m (6 feet) length and the other of 0,9m (3 feet) length.

Standard lengths for tankers, LNG and LPG vessels are 11m and 22m but any length can be produced according to client requirements.



### Grommet Type

Grommet type tails are used in special applications requiring high strengths.

They have standard two soft eyes, one of 1,8m (6 feet) length and the other of 0,9m (3 feet) length.

The eyes are formed by lashings (seizing the two rope bodies together to form an eye).

The strength of a Grommet mooring tail is 1,6 times the strength of a single leg (of the same material, construction and size) and its length depends on the customer's special requirements.



## Single Leg Mooring Tails

### NIKA-NYLON



NIKA-Nylon tails exhibit excellent dynamic load and shock absorption properties. 22m Nylon Mooring tails are ideal in exposed berths/terminals.



Diam	MBL 8strand	TDBF 8strand	MBL 12/24strand	TDBF 12/24strand
mm	Tons	Tons	Tons	Tons
68	115	97,75	116	103,2
72	130	110,5	130	115,7
76	143	121,55	144	128,2
80	158	134,3	159	141,5
84	175	148,75	175	155,8
88	192	163,2	193	171,8
96	213	181,05	213	189,6
104	240	204	241	214,5

Specific gravity	1,14
Melting point:	218°C
Elongation at breaking:	25-30%
Fiber water absorption	3-5%

### NIKA-POLYESTER



NIKA-Polyester tails are fit for applications where abrasion resistance is needed. Made of high-Tenacity marine grade Polyester fibers.

Diam	MBL 8strand	TDBF 8strand	MBL 12/24strand	TDBF 12/24strand
mm	Tons	Tons	Tons	Tons
68	102	91,8	109,5	104,0
72	109	98,1	118	112,1
76	120	108	129	122,6
80	135	121,5	145	137,8
84	148	133,2	160	152,0
88	160	144	173,5	164,8
96	195	175,5	206	195,7
104	215	193,5	217	206,2

Specific gravity	1,38
Melting point:	265°C
Elongation at breaking:	18%
Fiber water absorption	0,1%

### IMPROVED Mixed NIKA-Steel®



Improved NIKA-Steel® tails are produced from mixed Polyester/NIKA-Steel® yarns in a special proportion that ensures excellent strength and abrasion resistance.



Diam	MBL 8strand	TDBF 8strand	MBL 12/24strand	TDBF 12/24strand
mm	Tons	Tons	Tons	Tons
68	86	77,4	88	83,6
72	96	86,4	98	93,1
76	108	97,2	110	104,5
80	120	108	121	115,0
84	129	116,1	132	125,4
88	137	123,3	144	136,8
96	161	144,9	169	160,6
104	186	167,4	196	186,2

Specific gravity	0,99
Melting point:	165°C NIKA-Steel® / 265°C Polyester
Elongation at breaking:	15-18%
Fiber water absorption	0,1 %

### NIKA-Flex Steel



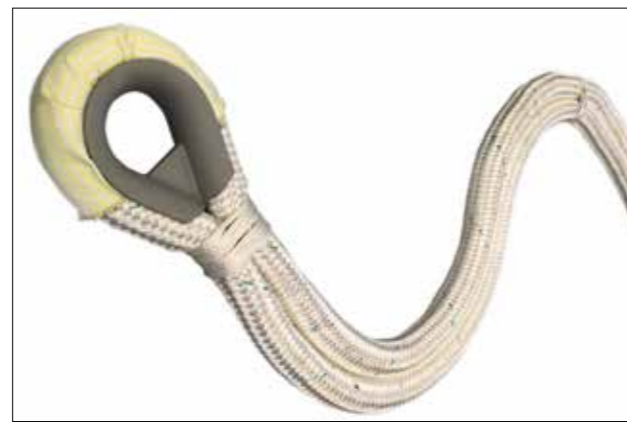
NIKA-Flex tails are specially engineered for demanding applications where high strength and excellent abrasion resistance are a must.

Diam	MBL 8strand	TDBF 8strand	MBL 12/24strand	TDBF 12/24strand
mm	Tons	Tons	Tons	Tons
68	116	104,4	116	110,2
72	128	115,2	128	121,6
76	145	130,5	145	137,8
80	159	143,1	159	151,1
84	175	157,5	175	166,3
88	193	173,7	193	183,4
96	229	206,1	229	217,6
104	262	235,8	262	248,9

Specific gravity	1,14
Melting point:	165°C NIKA-Steel® / 265°C Polyester
Elongation at breaking:	15-18%
Fiber water absorption	0,1 %

# Grommet Type Mooring Tails

Mooring tails of grommet construction offer very high strength and meet the requirements of the most demanding applications. With a variety of fiber materials, the user can select the desired properties such as floatability, high elongation properties etc. that best suit specific operations.



The Grommet type tail is manufactured out of three production choices (nylon, polyester, Mixed)

Diam	GROMMET NYLON DB		GROMMET POLYESTER DB		GROMMET MIXED DB	
	MBL	TDBF	MBL	TDBF	MBL	TDBF
mm	Tons	Tons	Tons	Tons	Tons	Tons
68	187,2	166,6	182,4	173,3	145,6	138,3
72	209,6	186,5	201,6	191,5	161,6	153,5
76	236,8	210,8	225,6	214,3	179,2	170,2
80	260,8	232,1	252,8	240,2	196,8	187,0
84	284,8	253,5	278,4	264,5	220,8	209,8
88	310,4	276,3	302,4	287,3	241,6	229,5
96	377,6	336,1	361,6	343,5	275,2	261,4
104	436,8	388,8	420,8	399,8	336	319,2

SPECIFICATIONS		SPECIFICATIONS		SPECIFICATIONS	
Specific gravity	1,14	Specific gravity	1,38	Specific gravity	0,99
Melting point	218°C	Melting point	265°C	Melting poin	165°C NIKA-Steel® / 265°C Polyester
Elongation at breaking	25-30%	Elongation at breaking	18%	Elongation at breaking	15-18%
Fiber water absorption	3-5%	Fiber water absorption	0,1 %	Fiber water absorption	0,1 %
Chemical resistance	Very Good	Chemical resistance	Very Good	Chemical resistance	Very Good



# Eye Protection



## Polyester Eye

### Special braided polyester sleeves

Polyester Eye Splice Protector is a special braided cover designed for extra protection of the eye splices. In demanding applications, the Polyester Eye Splice Protector will satisfy every end-user with its endurance. Polyester Eye Splice Protector is made from specially twisted polyester fibers. The application of Nika® Thane-P coating reduces both internal and external friction and offers excellent protection.

#### FEATURES:

- Excellent abrasion resistance • UV resistance • Flexible • Excellent choice for tails



## Thor® Guard

### The "divine" protector for your mooring line

Thor® Guard is a one-piece unit that encloses both the splice and the eye of the line. It offers a continuous layer of abrasion resistant material without a break in protection at the transition from the eye to the splice.

The standard stock Thor® Guard is designed for lines 26mm–45 mm in diameter, with eye and having a mooring tail extending 2,13 m from the throat of the splice. Its design features handles on the eye of the Thor® Guard to assist in handling the line.

#### FEATURES:

- Encloses both the splice and the eye of the line • Excellent abrasion resistance • Light and flexible • Excellent choice for mooring lines

# Mooring Connection

Mandal shackle



Tonsberg Link



Connecting the mooring tails with the main high modulus line or wire requires attention to detail and effective equipment in order to ensure that 100% of the rope performance is achieved. Below there are given two most applicable types of line-tail connection.

A standard practice when connecting the mooring tail with a wire-rope or mooring ropes.

#### FEATURES:

- Robust connection • Used without reduction of mooring line strength

# Quality Control Testing



## Quality

Since the foundation of the Katradis Group, ropes have been our mainline product. With an 80-year experience in the ropes industry, the Katradis name has become synonymous with excellent quality ropes, supplied to the marine world by an efficient network of worldwide agents and distributors.

We offer a wide range of Rope Constructions & Custom Made Slings, covering the most common type of needs to the most specialized ones, destined for Shipping, Fishing and Industrial purposes. All ropes supplied by Katradis are very well preformed during all the stages of production, and free from internal stresses.

## PREFORMED WIRE ROPES LAST LONGER because they exhibit:

- Greater resistance to fatigue
  - Better distribution of the load among strands
  - Greater flexibility
  - Less tendency to kink
  - Greater safety in handling because the wires that break after long wear do not protrude neither damage adjacent wires.
- Our wire ropes are mainly 1960 N/mm<sup>2</sup> grade

# We serve worldwide



## We are wherever you need us

We provide you with access to our stock at all major ports with the support of the extensive global network of affiliated establishments, agents, suppliers and representatives. We guarantee immediate & reliable services all around the world.

## Katradis global network

**Africa:** Egypt (Alexandria, Port Said, Suez) | South Africa (Durban, Cape Town)

**Asia:** Singapore (Singapore) | South Korea (all ports) | China (Hong Kong, Shanghai, Qingdao, Zhenjiang & other ports)

**Europe:** Belgium (Antwerp, Zeebrugge) | Germany (Hamburg) | Netherlands (Rotterdam, Amsterdam) Spain (Algeciras, Cadiz, Las Palmas) | Turkey (all ports) | Bulgaria (Varna) | Greece (all ports) | Cyprus (all ports)

**Middle East:** U.A.E. (Fujairah, Dubai, Sharjah, Jebel Ali)

**North America:** Canada (Montreal) USA (Houston, New Orleans, New York, Los Angeles)

**Central America:** Panama (Panama)

**Australia:** (Brisbane, Sydney, Melbourne, Adelaide, Fremantle and Darwin)

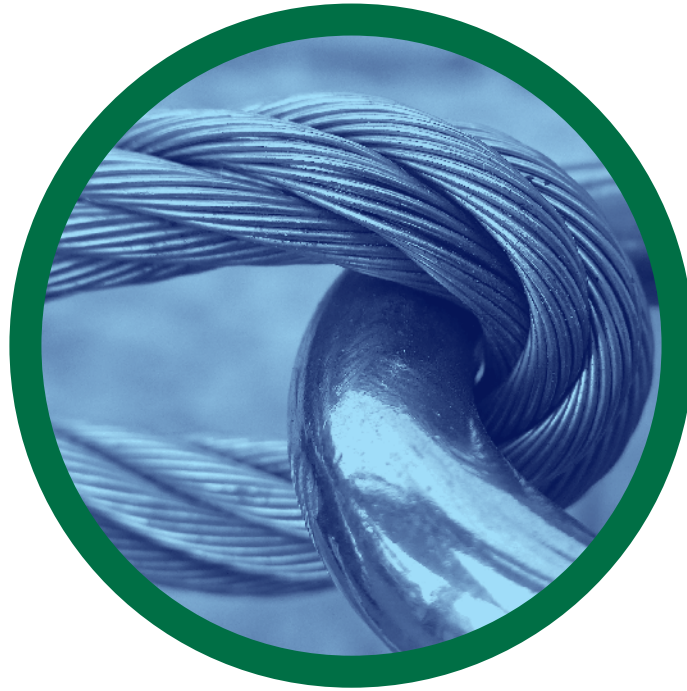


The **KATRADIS GROUP OF COMPANIES**

in its continued effort for better customer service and support is pleased to announce that all of its affiliated establishments maintain stocks of KATRADIS products ready for immediate delivery.

Read more: <http://www.katradis.com>





*Worldwide strong relationships!*



EST. 1936

**KATRADIS GROUP OF COMPANIES**

11, Psaron str., 186 48 Piraeus, Greece, T: +30 2104060300  
F: +30 2104626268 & +302104619631 - E: info@katradis.com - www.katradis.com

