

ROPE: STEEL WIRE



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TRAWL WARPS

Oliveira Green Strand®



- MOST COMMON FOR SMALL AND MEDIUM FISHING VESSELS
- IT HAS A VERY GOOD RELATION: ABRASION RESISTANCE /CORROSION RESISTANCE
- PARALLEL LAY TO AVOID THE CROSSING OF THE SINGLE WIRES IN THE STRANDS
- THIS WIRE ROPE IS SUITABLE FOR BOTTOM, SHRIMP AND PAIR TRAWLERS AND PURSE SEINERS



6x 19 SEALE FIBER CORE

NOMINAL ROPE DIAMETER	APPROXIMATE MASS	MINIMUM BREAKING FORCE 1570 N/MM ²	
mm	Kg/m	kN	kgf
12	0,53	81,6	8.318
13	0,62	98,5	10.041
14	0,71	112	11.448
15	0,83	130	13.234
16	0,95	149	15.229
17	1,06	168	17.120
18	1,19	191	19.431
19	1,33	209	21.321
20	1,49	234	23.905
22	1,72	278	28.358
24	2,05	331	33.715
26	2,49	401	40.857
28	2,85	460	46.949
30	3,27	527	53.776
32	3,74	603	61.443

- EASY TO SPLICE AND HANDLE



6x 19 SEALE STEEL CORE

NOMINAL ROPE DIAMETER	APPROXIMATE MASS	MINIMUM BREAKING FORCE 1570 N/MM ²	
mm	Kg/m	kN	kgf
18	1,35	204	20.796
19	1,50	224	22.792
20	1,69	258	26.258
22	1,95	304	30.984
24	2,33	362	36.866
26	2,82	440	44.848
28	3,22	510	51.990
30	3,69	592	60.393
32	4,24	670	68.270

- HIGHER BREAKING LOAD, COMPARED TO THE STEEL WIRE ROPES WITH SYNTHETIC CORE
- LOW ELONGATION AND VERY LOW DIAMETER REDUCTION
- GOOD RESISTANCE AGAINST CRUSHING



6x 19 SEALE MIXED CORE

NOMINAL ROPE DIAMETER	APPROXIMATE MASS	MINIMUM BREAKING FORCE 1570 N/MM ²	
mm	Kg/m	kN	kgf
18	1,28	197	20103
19	1,36	208	21237
20	1,58	142	24742
22	1,84	281	28763
24	2,19	336	34330
25	2,42	372	37938
26	2,65	420	42784
28	3,05	481	49072
30	3,49	557	56804
32	3,97	632	64433

- THE CORE OF THE WIRE ROPE IS A COMBINATION OF STEEL AND FIBER, WHICH RESULTS IN A HIGHER BREAKING LOAD
- LESS ELONGATION AND BETTER RESISTANCE AGAINST CRUSHING
- INTERNAL LUBRICATION THAT LASTS LONGER
- EASY TO SPLICE AND HANDLE
- HIGHER BREAKING LOAD AND MORE STABLE WIRE ROPE COMPARED TO FC



TRAWL WARPS

Oliveira Super Yellow Fin®



SUPER YELLOW FIN® is a compacted steel wire rope with superior characteristics.

- **VERY FLEXIBLE ROPE**
- **HIGHER RESISTANCE AGAINST CRUSHING**
- **HIGHER RESISTANCE TO FATIGUE**
- **HIGHER BREAKING STRENGTH**
- **REDUCED WEAR WHEN PASSING THROUGH BLOCKS, GUIDING GEAR AND PURSE SEINE RINGS**
- **LOWER TENDENCY TO UNTWIST**
- **LESS ELONGATION OF WIRE ROPE**

It is fully recommended for purse seining (**TUNA FISHING**), but also excellent performance in trawling.

SUPER YELLOW FIN®, the most used Purse Seine Wire Rope in the world!

FIBER CORE

6x K19 SEALE		6x K26 WARRINGTON SEALE	
FROM 14 mm TO 26 mm		FROM 28 mm TO 36 mm	
NOMINAL ROPE DIAMETER	APPROXIMATE MASS	MINIMUM BREAKING FORCE 1570 N/MM ²	
mm	Kg/m	kN	kgf
14	0,77	119	12.184
16	1,01	161	16.385
18	1,29	204	20.838
19	1,43	224	22.792
20	1,55	242	24.682
21	1,72	271	27.623
22	1,90	302	30.774
24	2,26	358	36.551
25	2,47	390	39.807
26	2,70	427	43.588
28	3,05	478	48.734
30	3,34	520	53.041
32	3,95	618	63.018
34	4,51	703	71.736
36	5,04	783	79.823

STEEL CORE

6x K19 SEALE		6x K26 WARRINGTON SEALE	
FROM 14 mm TO 26 mm		FROM 28 mm TO 36 mm	
NOMINAL ROPE DIAMETER	APPROXIMATE MASS	MINIMUM BREAKING FORCE 1570 N/MM ²	
mm	Kg/m	kN	kgf
14	0,87	134	13.654
16	1,14	175	17.855
18	1,45	221	22.582
20	1,75	264	26.888
21	1,93	293	29.829
22	2,14	324	33.085
24	2,54	383	39.071
25	2,77	427	43.588
26	3,02	467	47.579
28	3,44	525	53.566
30	3,82	608	61.968
32	4,45	685	69.845
34	5,06	773	78.773
36	5,66	866	88.331



TRAWL WARPS

Oliveira Super Atlantic®



SUPER ATLANTIC® HEAVY COMPACTED FISHING WIRE ROPES especially designed for large pelagic trawlers, midwater trawlers and demersal trawlers. It is produced in the construction 6x K (compacted) 26 WS (Warrington Seale) in order to offer an higher grade of flexibility and a very strong abrasion resistance.

- **VERY HIGH BREAKING LOAD / VERY LOW ELONGATION / STRONG ABRASION RESISTANCE**
- **SPECIAL GREASE FOR INCREASING SWR LIFETIME BY REDUCTION OF ABRASION AND CORROSION**
- **HYDRAULIC ROLLER COMPACTING - INHOUSE DESIGNED EQUIPMENT - TO AVOID DAMAGE DURING COMPACTING**
- **EXCELLENT FATIGUE RESISTANCE**
- **HIGH PERFORMANCE IN TOUGH WORKING CONDITIONS**
- **HIGHEST QUALITY WIRE, MADE ACCORDING TO OUR SPECIFICATIONS AND ESPECIALLY DESIGNED FOR TRAWLING**

All individual wires made inhouse WCWG - ultimate control over quality. Every finished product is tested in test bench and all data is recorded accordingly and kept for a certain time to trace back, in case needed.

6x K26 WARRINGTON SEALE FIBER CORE			
NOMINAL ROPE DIAMETER	APPROXIMATE MASS	MINIMUM BREAKING FORCE 1570 N/MM ²	
mm	Kg/m	kN	kgf
19	1,46	232	23.690
20	1,61	256	26.078
22	1,93	306	31.238
24	2,29	365	37.221
25	2,52	402	40.980
26	2,68	428	43.668
28	3,18	506	51.583
30	3,62	575	58.657
32	4,12	655	66.762
34	4,64	739	75.309
36	5,21	829	84.519

6x K26 WARRINGTON SEALE STEEL CORE			
NOMINAL ROPE DIAMETER	APPROXIMATE MASS	MINIMUM BREAKING FORCE 1570 N/MM ²	
mm	Kg/m	kN	kgf
20	1,79	290	29.578
22	2,15	349	35.584
24	2,57	418	42.574
25	2,81	455	46.421
26	3,02	487	49.671
28	3,55	575	58.650
30	4,02	652	66.479
32	4,54	744	75.916
34	5,19	842	85.902
36	5,80	941	95.905
38	6,41	1045	106.561
40	7,19	1165	118.822
42	7,91	1280	130.505
44	8,69	1408	143.624



TRAWL WARPS

Oliveira Zincal Compact®



ZINCAL COMPACT® is another very successful product manufactured by **OLIVEIRA SÁ**. It is a compacted wire rope with the construction 6x K26WS, manufactured both with steel or fiber core. **ZINCAL COMPACT®** has all the wires covered with a thick lay of zinc - aluminium alloy, which gives a higher corrosion resistance to the wire rope and an improved lifetime due to this special coating.

- EXCELLENT LIFETIME AND PERFORMANCE
- EXCELLENT ABRASION AND WEAR RESISTANCE
- EXCELLENT RESISTANCE AGAINST CRUSHING
- EXCELLENT FATIGUE RESISTANCE
- VERY HIGH BREAKING LOAD
- LOWER ELONGATION OF THE WIRE ROPE
- BETTER GREASE ADHERENCE

ZINCAL COMPACT® is the **ULTIMATE** wire rope for trawlers and beamers, where a good **resistance against corrosion** is required.

6x K26 WARRINGTON SEALE FIBER CORE			
NOMINAL ROPE DIAMETER	APPROXIMATE MASS	MINIMUM BREAKING FORCE 1570 N/MM ²	
mm	Kg/m	kN	kgf
19	1,46	232	23.690
20	1,61	256	26.078
22	1,93	306	31.238
24	2,29	365	37.221
25	2,52	402	40.980
26	2,68	428	43.668
28	3,18	506	51.583
30	3,62	575	58.657
32	4,12	655	66.762
34	4,64	739	75.309
36	5,21	829	84.519

6x K26 WARRINGTON SEALE STEEL CORE			
NOMINAL ROPE DIAMETER	APPROXIMATE MASS	MINIMUM BREAKING FORCE 1570 N/MM ²	
mm	Kg/m	kN	kgf
20	1,79	290	29.578
22	2,15	349	35.584
24	2,57	418	42.574
25	2,81	455	46.421
26	3,02	487	49.671
28	3,55	575	58.650
30	4,02	652	66.479
32	4,54	744	75.916
34	5,19	842	85.902
36	5,80	941	95.905
38	6,41	1045	106.561
40	7,19	1165	118.822
42	7,91	1280	130.505
44	8,69	1408	143.624

Also available with plastic impregnation in the core.

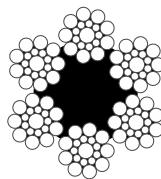
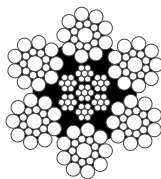


ROPE: STEEL WIRE

General Purpose SWR

6x19S

made to EN12835 specifications
lay-up of wires 1-9-9

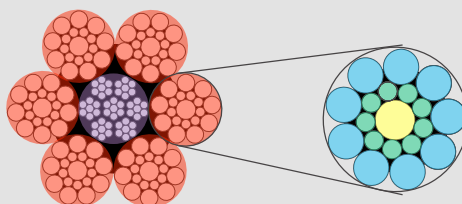


SWR dia	IWRC			
	Weight	Minimum breaking load		
		1770 N/mm ²	1960 N/mm ²	2160 N/mm ²
[mm]	[kg/m]	[kN]	[kN]	[kN]
3	-	-	-	-
4	-	-	-	-
5	-	-	-	-
6	-	-	-	-
8	0.256	40.3	44.7	-
10	0.400	63.0	69.8	-
12	0.576	90.7	100.5	-
13	0.676	106.5	117.9	-
14	0.784	124.0	137.0	-
16	1.024	161.0	179.0	-
18	1.296	204.0	226.0	-
20	1.600	252.0	279.0	-
22	1.936	305.0	338.0	-
24	2.304	363.0	402.0	-
26	2.704	426.0	472.0	-
28	3.136	494.0	547.0	-
30	3.600	567.0	628.0	-

FC		
Weight	Minimum breaking load	
	1770 N/mm ²	1960 N/mm ²
[kg/m]	[kN]	[kN]
0.030	4.9	5.2
0.054	8.7	9.2
0.084	13.6	14.4
0.121	19.6	20.7
0.230	37.4	41.4
0.359	58.4	64.7
0.517	84.1	93.1
0.607	98.7	109.3
0.704	114.0	127.0
0.919	150.0	166.0
1.163	189.0	210.0
1.436	234.0	259.0
1.738	283.0	313.0
2.068	336.0	373.0
2.427	395.0	437.0
2.815	458.0	507.0
3.231	526.0	582.0

Understanding constructions of steel wire rope
example: 6 x 19s IWRC 1960 b sZ

6 = no of strands
19 = number of wires in each strand
IWRC = type of core
1960 = rope grade
b = drawn galvanised
sZ = right hand ordinary lay



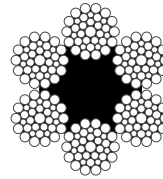
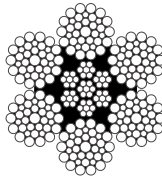


ROPE: STEEL WIRE

General Purpose SWR

6x36WS

made to EN12835 specifications
lay-up of wires 1-7-7+7-14



SWR dia	IWRC			
	Weight	Minimum breaking load		
		1770 N/mm ²	1960 N/mm ²	2160 N/mm ²
[mm]	[kg/m]	[kN]	[kN]	[kN]
8	0.262	40.3	44.7	-
10	0.409	63.0	69.8	-
12	0.589	90.7	100.5	-
13	0.691	106.5	117.9	-
14	0.802	124.0	137.0	-
16	1.047	161.0	179.0	-
18	1.325	204.0	226.0	-
20	1.636	252.0	279.0	-
22	1.980	305.0	338.0	-
24	2.356	363.0	402.0	-
26	2.765	426.0	472.0	-
28	3.207	494.0	547.0	-
30	3.681	567.0	628.0	-
32	4.188	645.0	715.0	-
34	4.728	728.0	807.0	-
36	5.301	817.0	904.0	-
38	5.906	910.0	1008.0	-
40	6.544	1008.0	1116.0	-
42	7.215	1112.0	1231.0	-
44	7.918	1220.0	1351.0	-
46	8.654	1333.0	1476.0	-
48	9.423	1452.0	1608.0	-
50	10.225	1575.0	1744.0	-
52	11.059	1704.0	1887.0 *	1931.9 *
54	11.926	-	1961.3 *	2167.3 *
56	12.826	-	-	-
58	13.759	-	2196.7 *	2422.2 *
60	15.500	-	2441.8 *	2687.0 *
64	17.300	-	2687.0 *	2951.8 *
68	19.000	-	2932.2 *	3236.2 *
70	20.800	-	3265.6 *	3530.4 *
76	24.700	-	3814.8 *	4167.8 *
84	29.000	-	4383.6 *	4834.7 *

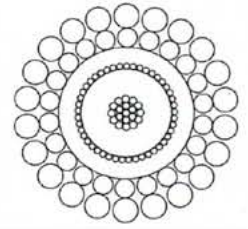
FC		
Weight	Minimum breaking load	
	1770 N/mm ²	1960 N/mm ²
[kg/m]	[kN]	[kN]
0.235	37.4	41.4
0.367	58.4	64.7
0.528	84.1	93.1
0.620	98.7	109.3
0.719	114.0	127.0
0.940	150.0	166.0
1.189	189.0	210.0
1.468	234.0	259.0
1.776	283.0	313.0
2.114	336.0	373.0
2.481	395.0	437.0
2.877	458.0	507.0
3.303	526.0	582.0
3.758	598.0	662.0
4.243	675.0	748.0
4.756	757.0	838.0
5.299	843.0	934.0
5.872	935.0	1035.0
6.474	1030.0	1141.0
7.105	1131.0	1252.0
7.776	1236.0	1369.0
8.456	1346.0	1490.0
9.175	1460.0	1617.0
9.924	1579.0	1749.0
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-

* manufactured to API 9A specifications



TRAWL WARPS

Eurodata Cable



	IMPERIAL	METRIC
PROPERTIES		
Cable Armor Diameter	0.433" +0.005" -0.002"	(11.00mm +0.13mm -0.05mm)
Minimum Sheave Diameter	20"	(51 cm)
Cable Stretch Coefficient	0.76 ft/kft/klb	(0.85 m/km/5kN)
ELECTRICAL		
Maximum Conductor Voltage	1,500 VDC Central conductor 1,000 VDC Server conductor	
Central conductor AWG Rating	15	
Server conductor AWG Rating	12	
Impedance Z	41 Ω @1 MHz	
Minimum Insulation Resistance	1,500 MΩ/kft @500 VDC	(457 MΩ/km @500 VDC)
Armor Electrical Resistance	1.4 Ω/kft	(4.5 Ω/km)
MECHANICAL		
Cable Breaking Strength		
Ends Fixed	17,600 lb	(78.32 kN) Nominal
Maximum Suggested Working Tension	8,800 lb	(39.16 kN)
Number and Size of Wires		
Inner Armor	22 x 0.0390"	(0.991 mm)
Outer Armor	22 x 0.0495"	(1.257 mm)
Average Wire Breaking Strength		
Inner Armor	357 lb	(1.59 kN)
Outer Armor	575 lb	(2.56 kN)

Cable Type	Core Description									Cable Weight	
	Temperature Rating			Plastic Type	Insulation Thickness	Copper Construction	Res Typical	Cap Typical	OD Each	In Air	In H2O
	1 hr. max Temp	8 hr. max Temp	Cond max Temp		in mm	in mm	Ω/kft Ω/km	pF/ft pF/m	in mm	lbs/kft kg/km	
EuroData® CX 1100	230	220	190	HDPE	0.0535	19 x 0.0142	2.8	42	0.178		
					1.359	19 x 0.361	9.1	139	4.521	302	250
					0.030	45 x 0.0119	1.8	149	0.262	450	372
	110	104	88		0.767	45 x 0.302	5.8	488	6.660		

- The Armor wires are high tensile, Extra Improved Plow Steel (EIPS) with a Zn+Al Coat for increased corrosion resistance according to ASTM A856
- Core assembly – Central copper strand consists of nineteen wires. 1 + 6 + 12 wires.
- Core assembly – Coaxial arrangement consists of 45 x 0.0119" copper wires stranded around central conductor.
- Voids in the copper strand are filled with a water-blocking agent to reduce water and gas migration.
- Conductor resistance is measured at 68 deg. F.
- The temperature rating assumes a normal gradient for both temperature and weight.
- All values shown are nominal or typical values.

