



# SPECIAL WIRE ROPES

# INTRODUCTION



**Quality Products, Outstanding Service and Comprehensive Technical Support – It’s what today’s industries expect from their supplier partners. And that’s what WireCo WorldGroup is all about.**

WireCo WorldGroup is the global market, manufacturing and technical leader in wire and synthetic rope manufacturing, providing a consultative approach to offer customers a single, reliable source for performance matched solutions to fit their specific application and budget needs. But it doesn’t stop there. WireCo WorldGroup offers clients the education and expertise needed to enhance product performance and value.

With our comprehensive range of trusted, global brands we deliver unmatched technical expertise and innovation as well as unparalleled quality assurance meeting and exceeding international quality certifications.

WireCo WorldGroup is on the ground everywhere you are - with manufacturing and distribution facilities all around the world and more than 4,000 global employees supporting these efforts. Our customers enjoy global availability for a consistent, responsive supply no matter where and when they need it.



Already in the 6th generation Oliveira’s goal is to provide valuable solutions to our customers. Our products meet the international standards and offer an excellent value to your application.

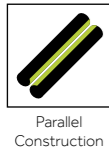


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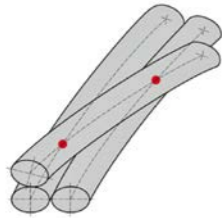
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## GENERAL DEFINITIONS

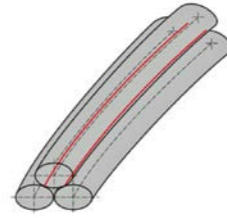
### PARALLEL LAY ROPES



In a non parallel lay rope all wires and strands have different lay length. The high stress concentration at the crossover point leads to an early internal failure. In a parallel lay rope all wires and strands have the same lay length. The linear contact leads to an optimal stress distribution. Furthermore the compacted parallel design leads to a higher fill factor and breaking strength.

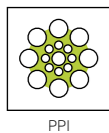


cross lay (non-parallel)  
stress concentration



parallel lay  
stress distribution

### PPI - PLASTIC PROTECTED IMPREGNATION



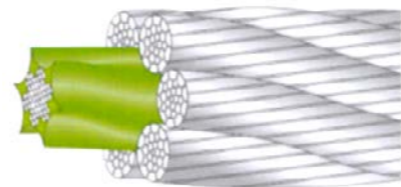
In consequence of being not only a steel wire rope producer but also a synthetic rope manufacturer, Oliveira has a strong and deep know-how of plastic and its applications. The PPI operation is applied during the Oliveira process in one continuous operation which guarantees a perfect impregnation and equal stress and tension of all the components. Resulting the plastic forms only small braces between the strands so they can keep their flexibility to give in to the relative movements within the rope.

Positive effects:

- Allows a homogeneous stress distribution in the rope
- Improves the structural stability
- Encapsulates the lubricant in the core
- Protects the core from corrosion

Resulting in:

- A longer service life
- Keeping its non rotational properties in the most severe conditions
- Internal rope protection against corrosive environment
- Favouring outer maintenance



### SWIVEL USE



Rotation resistant ropes can be used with a swivel.  
All other rope constructions may not be used with a swivel!



ISO 21669 – General guidance on swivel use (rotation-resistance)

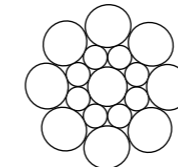
- Less than or equal to 1 turn/1000d lifting a load equivalent to 20% MBF, a swivel can be used
- Greater than 1 turn but no greater than 4 turns/1000d – a swivel may be used subject to the recommendations of the rope manufacturer and/or approval of a competent person
- Greater than 4 turns/1000d – a swivel should not be used

### COMPACTING

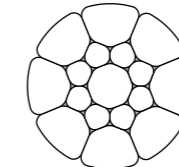


OLIVEIRA is using the most improved and updated technology in the world (multiroll system) for compacting the strands, resulting in:

- Perfect control of the calibration and of the cross section
- No outer surface wearing and injuring
- No peel-off of the zinc coating
- No damage of the inner wires, thanks to the gradual lamination
- All these properties lead the ropes to the highest performance and resistance to fatigue, when compared with the other usual compacting technologies.



conventional  
strand



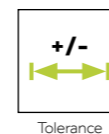
compacted  
strand

### LUBRICATED



As a standard feature, Oliveira special wire ropes receive intensive lubrication during the production process. This in-process treatment will provide the rope with ample protection against corrosion and it is meant to reduce the friction between the elements which make up the rope as well as the friction between rope and sheaves or drums. This lubrication, however, only lasts for a limited time and should be reapplied periodically.

### PRODUCTION TOLERANCE

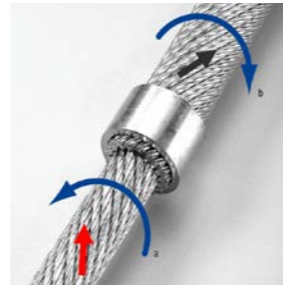


Oliveira special wire ropes are produced within a tolerance range between +0% and +5%. Generally the standard production tolerance is at the upper limit of the tolerance range, between +1% and +4%. For this reason Oliveira special wire ropes fulfill the requirements of the famous drum manufacturers.

## GENERAL DEFINITIONS

### ROTATION-RESISTANT ROPES

In a conventional rope, an external load creates a moment which tries to un-twist the rope. A rotation resistant steel wire rope has a steel core which is an independent rope, closed in the opposite direction to the outer strands. Under load, the core tries to twist the rope in one direction, the outer strands try to twist it in the opposite direction. The geometrical design of a rotation resistant wire rope is such that the moments in the core and the outer strands compensate each other over a wide load spectrum, so that even with great lifting heights practically no rope twist occurs.



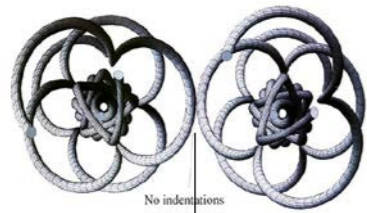
### MULTIPLE LAYER SPOOLING

A drum coiling a rope in more than one layer is a multiple layer system with new demands to a wire rope.

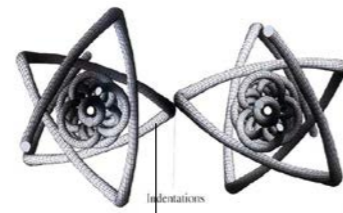
- Low diameter reduction under tension
- Crushing resistance in crossovers and layer crossovers
- Extreme smooth surface for less indentations or pressure in crossovers

The following rope properties are required for a long service life:

- Lang's lay to prevent indentations

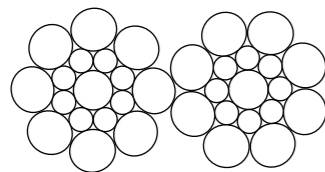


Lang's lay ropes: no indentations of outer wires

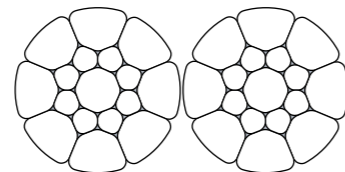


regular lay ropes: indentations of outer wires

- Compacted outer strands to prevent indentations



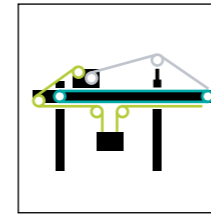
conventional strand



compacted strand

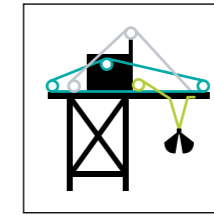
## ROPE SELECTION BY APPLICATION

### CONTAINER CRANE



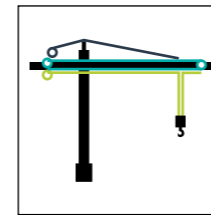
- HOIST ROPE**  
OLIVEIRA HD 8 K (Option PPI)
- BOOM HOIST**  
OLIVEIRA HD 8 K (Option PPI)
- TROLLEY**  
OLIVEIRA HD 8 K (Option PPI)

### SHIP UNLOADER



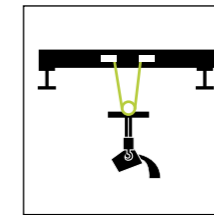
- HOIST ROPE**  
OLIVEIRA HD 8 K (Option PPI)
- BOOM HOIST**  
OLIVEIRA HD 8 K (Option PPI)
- TROLLEY**  
OLIVEIRA HD 8 K (Option PPI)

### TOWER CRANE



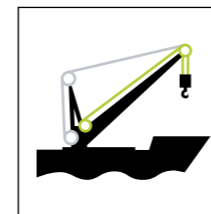
- HOIST ROPE**  
OLIVEIRA TOWERLIFT15  
OLIVEIRA LT 24 K
- BOOM PENDANT**  
OLIVEIRA HD 8 K (Option PPI)
- TROLLEY**  
OLIVEIRA SC 6 K

### OVERHEAD CRANE



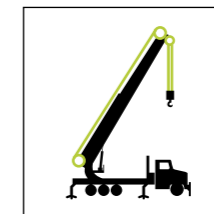
- HOIST ROPE**  
OLIVEIRA HD 8 K (Option PPI)  
OLIVEIRA SC 6 K
- Please note: Option PPI if temperature is below 115 degrees C on the surface of the rope!

### DECK CRANE



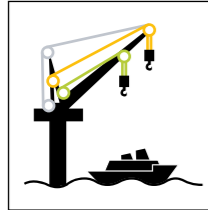
- HOIST ROPE**  
OLIVEIRA NR MAXIPACT (Option PPI)  
OLIVEIRA NR 15 MAXILIFT (Option PPI)  
OLIVEIRA DC 4 K
- BOOM HOIST**  
OLIVEIRA HD 8 K (Option PPI)

### TELESCOPIC MOBILE CRANE



- HOIST ROPE**  
OLIVEIRA NR MAXIPACT (Option PPI)  
OLIVEIRA NR 15 MAXILIFT (Option PPI)

## OFFSHORE PEDESTAL CRANE



### HOIST ROPE

OLIVEIRA NR MAXIPACT  
(Option PPI)

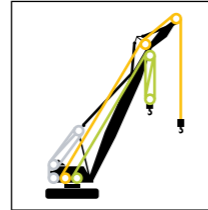
### BOOM HOIST

OLIVEIRA HD 8 K (Option PPI)

### AUXILIARY HOIST

OLIVEIRA NR MAXIPACT  
(Option PPI)

## LATTICE BOOM CRAWLER CRANE



### HOIST ROPE

OLIVEIRA NR MAXIPACT  
(Option PPI)  
OLIVEIRA NR 15 MAXILIFT  
(Option PPI)  
OLIVEIRA LT 24 K

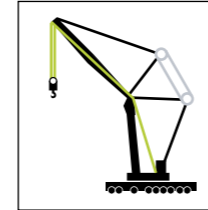
### BOOM HOIST

OLIVEIRA DP 8 K (Option PPI)  
OLIVEIRA HD 8 K (Option PPI)

### AUXILIARY HOIST

OLIVEIRA NR MAXIPACT  
(Option PPI)  
OLIVEIRA NR 15 MAXILIFT  
(Option PPI)

## LATTICE BOOM MOBILE CRANE



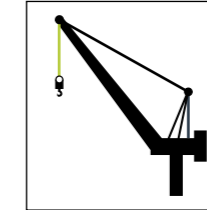
### HOIST ROPE

OLIVEIRA NR MAXIPACT  
(Option PPI)  
OLIVEIRA NR 15 MAXILIFT  
(Option PPI)  
OLIVEIRA LT 24 K

### BOOM HOIST

OLIVEIRA DP 8 K (Option PPI)  
OLIVEIRA HD 8 K (Option PPI)

## LUFFING-JIB TOWER CRANE



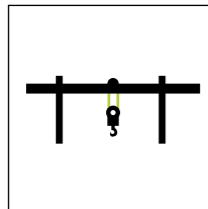
### HOIST ROPE

OLIVEIRA NR MAXIPACT  
(Option PPI)  
OLIVEIRA NR 15 MAXILIFT  
(Option PPI)

### BOOM PENDANT

OLIVEIRA HD 8 K (Option PPI)  
OLIVEIRA DP 8 K (Option PPI)

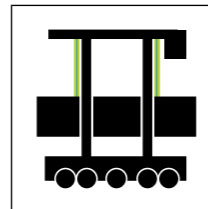
## RUBBER TIRED GANTRY / RAIL MOUNTED GANTRY



### HOIST ROPE

OLIVEIRA HD 8 K (Option PPI)  
OLIVEIRA DP 8 K (Option PPI)

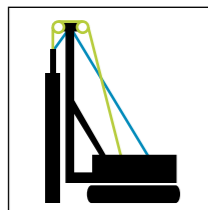
## STRADDLE CARRIERS



### HOIST ROPE

OLIVEIRA HD 8 K (Option PPI)  
OLIVEIRA DP 8 K (Option PPI)

## DRILLING / PILING



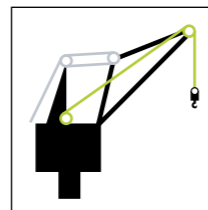
### HOIST ROPE

OLIVEIRA NR 15 MAXILIFT  
(Option PPI)

### FEED ROPE

OLIVEIRA HD 8 K (Option PPI)

## HARBOR MOBILE CRANE



### HOIST ROPE

OLIVEIRA HD 8 K (Option PPI)

### BOOM HOIST

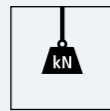
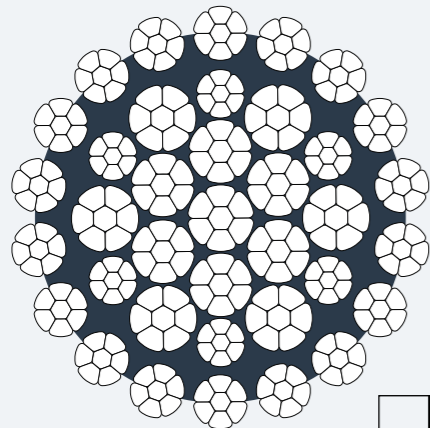
OLIVEIRA HD 8 K (Option PPI)



## ROTATION-RESISTANT ROPES

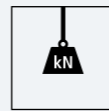
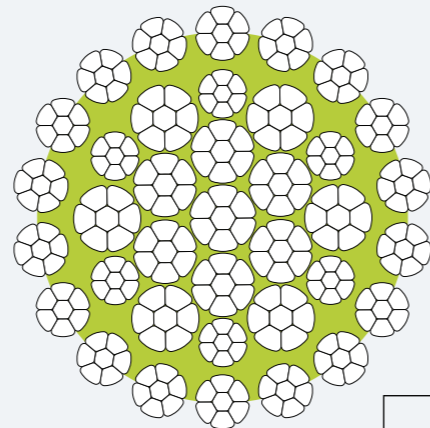
- Designed to generate reduced levels of torque and rotation when loaded.
- Designed with at least two layers of strands laid helically around a center.
- The direction of lay of the outer strands being opposite to that of the underlying layer.

# OLIVEIRA NR MAXIPACT



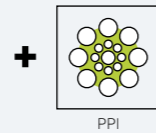
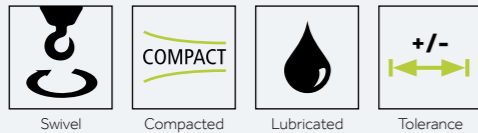
High breaking force

# OLIVEIRA NR MAXIPACT PPI



High breaking force

## PROPERTIES



## APPLICATIONS

All cranes and performant lifting devices where non-rotating and high MBL ropes are required.

Recommended for offshore, deck cranes and marine environment.

## OVERVIEW

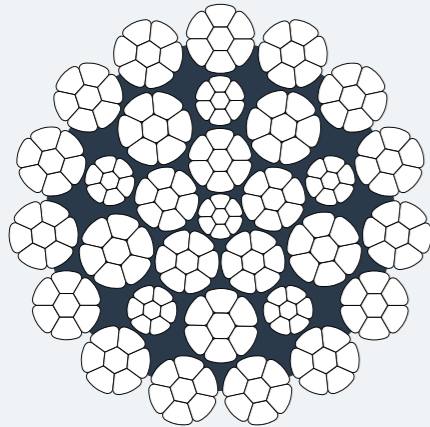
RCN	Diameter range [mm]	Construction	Number of outer strands	Number of wires	Number of outer load bearing wires	Average fill factor	Average spin factor
23-3	12,70-52	37xK7	18	259	126	0,716	0,85 (1960*) 0,81 (2160*)
30	54-64	37xK19	18	710	342	0,726	0,83 (1960*) 0,79 (2160*)
>31	66-70	37xK26	18	1092	468	0,714	0,81 (1960*) 0,78 (2160*)

- Temperature range of use: -50°C to +75°C
- Please add 1.0% on the weight for ropes with PPI
- Available in ordinary lay and Lang's lay
- Available in right hand and left hand

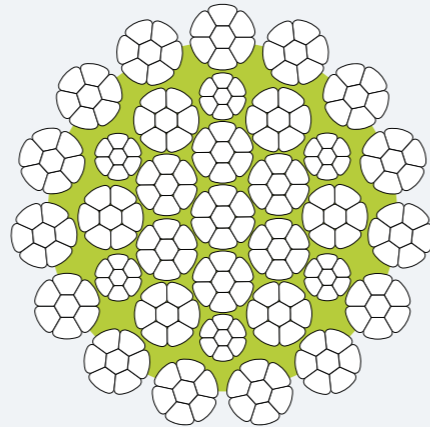
### minimum breaking force

nominal diameter		weight		1960 N/mm <sup>2</sup>				2160 N/mm <sup>2</sup>			
mm	inch	kg/m	lb/ft	kN	t [metric]	lbs	t[2000lbs]	kN	t [metric]	lbs	t[2000lbs]
12,70	1/2	0,77	0,52	148,0	15,09	33.272	16,64	155,9	15,90	35.048	17,52
13		0,82	0,55	157,8	16,09	35.468	17,73	165,7	16,90	37.248	18,62
14		0,95	0,64	183,3	18,69	41.198	20,60	192,5	19,63	43.266	21,63
15		0,97	0,65	209,6	21,37	47.116	23,56	220,6	22,50	49.603	24,80
15,88	5/8	1,09	0,73	230,0	23,45	51.706	25,85	241,0	24,58	54.179	27,09
16		1,24	0,84	239,4	24,41	53.820	26,91	251,4	25,64	56.521	28,26
17		1,40	0,94	269,7	27,50	60.637	30,32	283,4	28,90	63.719	31,86
18		1,57	1,05	302,5	30,85	68.015	34,01	317,7	32,40	71.428	35,71
19	3/4	1,75	1,18	338,9	34,55	76.180	38,09	355,9	36,29	80.002	40,00
20		1,93	1,30	374,2	38,16	84.120	42,06	393,0	40,07	88.341	44,17
21		2,13	1,43	412,2	42,03	92.659	46,33	432,9	44,14	97.309	48,65
22		2,33	1,57	452,0	46,09	101.610	50,81	474,7	48,40	106.709	53,35
22,23	7/8	2,36	1,59	458,0	46,70	102.962	51,48	481,0	49,05	108.133	54,07
23		2,55	1,72	494,8	50,46	111.236	55,62	519,6	52,99	116.818	58,41
24		2,79	1,87	540,3	55,09	121.461	60,73	567,4	57,86	127.556	63,78
25		3,03	2,04	587,1	59,87	131.985	65,99	616,6	62,87	138.608	69,30
25,40	1	3,08	2,07	595,4	60,71	133.851	66,93	625,3	63,76	140.573	70,29
26		3,25	2,18	634,2	64,68	142.584	71,29	666,1	67,92	149.739	74,87
27		3,54	2,38	683,6	69,70	153.670	76,84	717,9	73,20	161.382	80,69
28		3,79	2,55	734,0	74,85	165.019	82,51	770,9	78,61	173.299	86,65
28,58	1 1/8	3,97	2,67	768,3	78,34	172.721	86,36	806,8	82,27	181.376	90,69
29		4,07	2,73	790,0	80,56	177.599	88,80	824,4	84,07	185.335	92,67
30		4,37	2,94	846,3	86,30	190.262	95,13	888,8	90,63	199.809	99,90
31,75	1 1/4	4,84	3,25	930,0	94,83	209.072	104,54	975,0	99,42	219.189	109,59
32		4,95	3,32	959,6	97,85	215.730	107,87	1.007	102,69	226.383	113,19
34		5,58	3,75	1.079	110,03	242.569	121,28	1.133	115,53	254.710	127,35
34,93	1 3/8	5,93	3,98	1.146	116,86	257.631	128,82	1.202	122,57	270.220	135,11
36		6,30	4,23	1.221	124,51	274.492	137,25	1.282	130,73	288.205	144,10
38	1 1/2	6,96	4,68	1.352	137,87	303.942	151,97	1.418	144,60	318.779	159,39
40		7,69	5,17	1.495	152,45	336.094	168,05	1.568	159,89	352.500	176,25
41,28	1 5/8	8,29	5,57	1.602	163,36	360.144	180,07	1.682	171,52	378.129	189,06
42		8,48	5,70	1.645	167,74	369.811	184,91	1.730	176,41	388.913	194,46
44		9,37	6,30	1.818	185,38	408.703	204,35	1.909	194,66	429.160	214,58
44,45	1 3/4	9,51	6,39	1.838	187,42	413.199	206,60	1.928	196,60	433.432	216,72
46		10,33	6,94	1.995	203,43	448.494	224,25	2.095	213,63	470.975	235,49
47,63	1 7/8	10,86	7,29	2.095	213,63	470.975	235,49	2.190	223,32	492.331	246,17
48		11,32	7,61	2.184	222,71	490.983	245,49	2.293	233,82	515.487	257,74
50		12,03	8,09	2.331	237,70	524.030	262,01	2.451	249,93	551.007	275,50
50,80	2	12,42	8,34	2.400	244,73	539.541	269,77	2.517	256,66	565.844	282,92
52		13,17	8,85	2.548	259,82	572.813	286,41	2.676	272,88	601.589	300,79
54	2 1/8	14,34	9,63	2.731	278,48	613.953	306,98	2.868	292,45	644.752	322,38
56		15,33	10,30	2.854	291,03	641.605	320,80	3.049	310,91	685.442	342,72
57,15	2 1/4	16,07	10,80	2.981	303,98	670.155	335,08	3.180	324,27	714.892	357,45
58		16,49	11,08	3.063	312,34	688.590	344,29	3.261	332,53	733.102	366,55
60		17,78	11,95	3.293	335,79	740.296	370,15	3.500	356,90	786.831	393,42
60,33	2 3/8	17,78	11,94	3.335	340,08	749.738	374,87	3.520	358,94	791.327	395,66
62		18,74	12,59	3.477	354,56	781.661	390,83	3.705	377,80	832.917	416,46
63,50	2 1/2	19,66	13,21	3.652	372,40	821.002	410,50	3.870	394,63	870.010	435,01
64		20,20	13,57	3.750	382,39	843.033	421,52	4.018	409,72	903.282	451,64
66		21,19	14,24	3.900	397,69	876.755	438,38	4.135	421,65	929.585	464,79
66,68	2 5/8	21,34	14,34	3.910	398,71	879.003	439,50	4.150	423,18	932.957	466,48
68		22,26	14,96	4.100	418,08	921.716	460,86	4.354	443,98	978.818	489,41
70	2 3/4	23,78	15,98	4.322	440,72	971.624	485,81	4.646	473,76	1.044.462	522,23

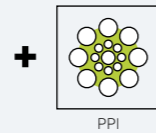
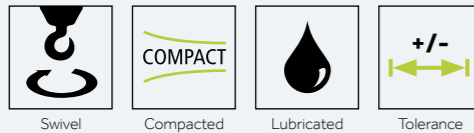
# OLIVEIRA NR15 MAXILIFT



# OLIVEIRA NR15 MAXILIFT PPI



## PROPERTIES



## APPLICATIONS

For all the most severe hoist applications, intensive use, corrosive environment ... Traditional applications like mobile cranes, tower cranes, crawler cranes.

Offshore cranes, deck cranes, cargo cranes, foundation cranes (Kelly cranes), harbor cranes.

## OVERVIEW

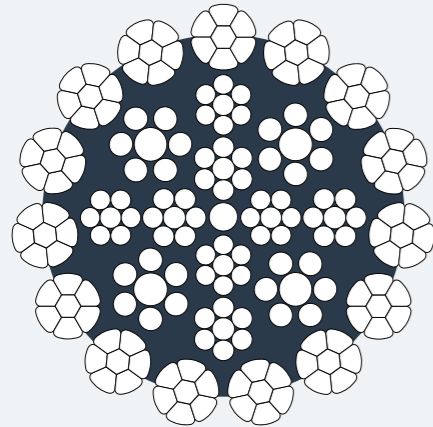
RCN	Diameter range [mm]	Construction	Number of outer strands	Number of wires	Number of outer load bearing wires	Average fill factor	Average spin factor
23-2	10 - 28,58	31xK7	15	217	105	0,701	0,85 (1960*)
23-2	30 - 50,80	34xK7	15	238	105	0,705	0,81 (2160*)

- Temperature range of use: -50°C to +75°C
- Please add 1.0% on the weight for ropes with PPI
- Available in ordinary lay and Lang's lay
- Available in right hand and left hand

nominal diameter		weight		minimum breaking force							
				1960 N/mm <sup>2</sup>				2160 N/mm <sup>2</sup>			
mm	inch	kg/m	lb/ft	kN	t [metric]	lbs	t[2000lbs]	kN	t [metric]	lbs	t[2000lbs]
10		0,48	0,32	<b>92,2</b>	9,40	20.727	10,36	<b>96,9</b>	9,88	21.784	10,89
11	7/16	0,56	0,38	<b>108,4</b>	11,05	24.365	12,18	<b>113,9</b>	11,61	25.604	12,80
12		0,68	0,46	<b>130,8</b>	13,34	29.401	14,70	<b>137,3</b>	14,01	30.876	15,44
12,70	1/2	0,76	0,51	<b>145,3</b>	14,82	32.665	16,33	<b>152,6</b>	15,56	34.306	17,15
13		0,79	0,53	<b>152,4</b>	15,54	34.257	17,13	<b>160,0</b>	16,32	35.976	17,99
14		0,93	0,62	<b>178,8</b>	18,23	40.187	20,09	<b>187,7</b>	19,14	42.204	21,10
14,30	9/16"	0,96	0,65	<b>185,3</b>	18,89	41.648	20,82	<b>194,6</b>	19,84	43.739	21,87
15		1,07	0,72	<b>206,3</b>	21,03	46.367	23,18	<b>216,6</b>	22,09	48.694	24,35
15,88	5/8	1,19	0,80	<b>229,0</b>	23,35	51.481	25,74	<b>240,0</b>	24,47	53.954	26,98
16		1,22	0,82	<b>234,1</b>	23,87	52.622	26,31	<b>245,8</b>	25,07	55.262	27,63
17		1,37	0,92	<b>265,4</b>	27,06	59.664	29,83	<b>278,7</b>	28,42	62.657	31,33
18		1,55	1,04	<b>298,4</b>	30,43	67.079	33,54	<b>313,4</b>	31,95	70.445	35,22
19	3/4	1,71	1,15	<b>329,5</b>	33,60	74.082	37,04	<b>346,1</b>	35,29	77.800	38,90
20		1,92	1,29	<b>370,0</b>	37,73	83.183	41,59	<b>388,6</b>	39,62	87.358	43,68
21		2,11	1,41	<b>406,3</b>	41,43	91.348	45,67	<b>426,7</b>	43,51	95.932	47,97
22		2,31	1,55	<b>446,3</b>	45,51	100.337	50,17	<b>468,7</b>	47,80	105.372	52,69
22,23	7/8	2,36	1,59	<b>454,7</b>	46,37	102.221	51,11	<b>477,5</b>	48,69	107.346	53,67
23		2,53	1,70	<b>487,0</b>	49,66	109.476	54,74	<b>511,4</b>	52,15	114.969	57,48
24		2,76	1,85	<b>531,5</b>	54,19	119.476	59,74	<b>558,1</b>	56,91	125.471	62,74
25		2,99	2,01	<b>576,3</b>	58,76	129.550	64,78	<b>605,2</b>	61,71	136.051	68,03
25,40	1	3,09	2,07	<b>594,9</b>	60,66	133.739	66,87	<b>624,8</b>	63,71	140.461	70,23
26		3,23	2,17	<b>624,1</b>	63,64	140.300	70,15	<b>655,4</b>	66,83	147.340	73,67
27		3,47	2,33	<b>669,1</b>	68,23	150.412	75,21	<b>702,6</b>	71,65	157.960	78,98
28		3,72	2,50	<b>721,0</b>	73,53	162.097	81,05	<b>757,2</b>	77,22	170.231	85,12
28,58	1 1/8	3,92	2,63	<b>756,2</b>	77,11	170.000	85,00	<b>794,1</b>	80,98	178.521	89,26
30		4,30	2,89	<b>828,8</b>	84,52	186.329	93,16	<b>870,4</b>	88,76	195.680	97,84
31,75	1 1/4	4,79	3,22	<b>920,0</b>	93,81	206.824	103,41	<b>965,0</b>	98,40	216.941	108,47
32		4,83	3,24	<b>935,5</b>	95,39	210.300	105,15	<b>982,4</b>	100,18	220.852	110,43
34		5,51	3,71	<b>1.063</b>	108,40	238.972	119,49	<b>1.117</b>	113,90	251.112	125,56
34,93	1 3/8	5,80	3,90	<b>1.119</b>	114,11	251.561	125,78	<b>1.175</b>	119,82	264.150	132,08
36		6,23	4,19	<b>1.202</b>	122,57	270.220	135,11	<b>1.262</b>	128,69	283.709	141,85
38	1 1/2	6,90	4,63	<b>1.330</b>	135,62	298.996	149,50	<b>1.397</b>	142,45	314.058	157,03
40		7,64	5,14	<b>1.477</b>	150,61	332.043	166,02	<b>1.552</b>	158,26	348.903	174,45
41,28	1 5/8	8,23	5,53	<b>1.586</b>	161,73	356.547	178,27	<b>1.666</b>	169,88	374.532	187,27
42		8,38	5,63	<b>1.644</b>	167,64	369.586	184,79	<b>1.726</b>	176,00	388.020	194,01
44		9,34	6,27	<b>1.780</b>	181,51	400.160	200,08	<b>1.868</b>	190,48	419.943	209,97
44,45	1 3/4	9,59	6,45	<b>1.868</b>	190,48	419.943	209,97	<b>1.962</b>	200,07	441.075	220,54
46		10,13	6,81	<b>1.949</b>	198,74	438.153	219,08	<b>2.047</b>	208,74	460.184	230,09
47,63	1 7/8	10,78	7,24	<b>2.078</b>	211,90	467.153	233,58	<b>2.180</b>	222,30	490.083	245,04
48		10,91	7,33	<b>2.106</b>	214,75	473.448	236,72	<b>2.212</b>	225,56	497.277	248,64
50		11,97	8,04	<b>2.314</b>	235,96	520.208	260,10	<b>2.431</b>	247,89	546.510	273,26
50,80	2	12,24	8,22	<b>2.372</b>	241,88	533.247	266,62	<b>2.491</b>	254,01	559.999	280,00



# OLIVEIRA TOWERLIFT 15



## PROPERTIES



## APPLICATIONS

The Towerlift 15 can be used for all cranes and hoisting systems where non-rotating properties are required: Tower cranes, mobile cranes, crawler cranes, offshore cranes, cargo cranes ...

## OVERVIEW

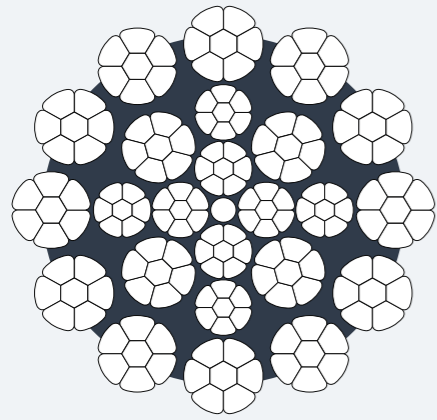
RCN	Diameter range [mm]	Construction	Number of outer strands	Number of wires	Number of outer load bearing wires	Average fill factor	Average spin factor
23-2	8-21	27x7	15	190	105	0,648	0,85 (1960*)
23-2	22-50,80	31x7	15	217	105	0,660	0,81 (2160*)

- Temperature range of use: -50°C to +75°C
- Available in ordinary lay and Lang's lay
- Available in right hand and left hand

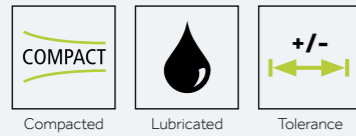
### minimum breaking force

nominal diameter		weight		1960 N/mm <sup>2</sup>				2160 N/mm <sup>2</sup>			
mm	inch	kg/m	lb/ft	kN	t [metric]	lbs	t[2000lbs]	kN	t [metric]	lbs	t[2000lbs]
8	5/16	0,27	0,18	<b>51,6</b>	5,26	11.600	5,80	<b>53,5</b>	5,46	12.027	6,01
9		0,35	0,24	<b>64,3</b>	6,56	14.455	7,23	<b>67,5</b>	6,88	15.175	7,59
9,53	3/8	0,40	0,27	<b>76,3</b>	7,78	17.153	8,58	<b>80,0</b>	8,16	17.985	8,99
10		0,43	0,29	<b>83,7</b>	8,54	18.817	9,41	<b>87,8</b>	8,95	19.738	9,87
11	7/16	0,53	0,36	<b>101,5</b>	10,35	22.818	11,41	<b>106,4</b>	10,85	23.920	11,96
12		0,62	0,42	<b>120,8</b>	12,32	27.157	13,58	<b>126,6</b>	12,91	28.461	14,23
12,70	1/2	0,73	0,49	<b>137,0</b>	13,97	30.799	15,40	<b>144,0</b>	14,68	32.372	16,19
13		0,75	0,50	<b>142,4</b>	14,52	32.013	16,01	<b>149,3</b>	15,22	33.564	16,78
14		0,85	0,57	<b>164,7</b>	16,79	37.026	18,51	<b>172,7</b>	17,61	38.824	19,41
15		1,01	0,68	<b>193,4</b>	19,72	43.478	21,74	<b>202,8</b>	20,68	45.591	22,80
15,88	5/8	1,13	0,76	<b>213,0</b>	21,72	47.884	23,94	<b>222,0</b>	22,64	49.908	24,95
16		1,14	0,77	<b>218,9</b>	22,32	49.211	24,61	<b>229,6</b>	23,41	51.616	25,81
17		1,28	0,86	<b>247,7</b>	25,26	55.685	27,84	<b>259,8</b>	26,49	58.405	29,20
18		1,44	0,97	<b>277,4</b>	28,29	62.362	31,18	<b>290,9</b>	29,66	65.397	32,70
19	3/4	1,61	1,08	<b>310,2</b>	31,63	69.736	34,87	<b>325,4</b>	33,18	73.153	36,58
20		1,80	1,21	<b>339,6</b>	34,63	76.345	38,17	<b>356,2</b>	36,32	80.077	40,04
21		1,96	1,31	<b>377,2</b>	38,46	84.798	42,40	<b>395,6</b>	40,34	88.934	44,47
22		2,19	1,47	<b>421,4</b>	42,97	94.734	47,37	<b>441,9</b>	45,06	99.343	49,67
22,23	7/8	2,26	1,52	<b>435,0</b>	44,36	97.792	48,90	<b>455,0</b>	46,40	102.288	51,14
23		2,40	1,61	<b>459,8</b>	46,89	103.367	51,68	<b>482,2</b>	49,17	108.403	54,20
24		2,60	1,74	<b>496,9</b>	50,67	111.708	55,85	<b>521,2</b>	53,15	117.170	58,59
25		2,84	1,91	<b>540,9</b>	55,16	121.599	60,80	<b>567,2</b>	57,84	127.512	63,76
25,40	1	2,92	1,96	<b>560,0</b>	57,10	125.893	62,95	<b>590,0</b>	60,16	132.637	66,32
26		3,00	2,02	<b>578,0</b>	58,94	129.940	64,97	<b>606,2</b>	61,82	136.279	68,14
27		3,30	2,22	<b>634,6</b>	64,71	142.664	71,33	<b>665,5</b>	67,86	149.610	74,81
28		3,60	2,42	<b>684,6</b>	69,81	153.904	76,95	<b>717,9</b>	73,21	161.390	80,70
28,58	1 1/8	3,69	2,48	<b>710,0</b>	72,40	159.614	79,81	<b>744,0</b>	75,87	167.258	83,63
30		4,06	2,73	<b>782,1</b>	79,75	175.823	87,91	<b>820,3</b>	83,65	184.411	92,21
31,75	1 1/4	4,53	3,04	<b>870,0</b>	88,72	195.584	97,79	<b>913,0</b>	93,10	205.251	102,63
32		4,59	3,08	<b>877,8</b>	89,51	197.337	98,67	<b>920,6</b>	93,88	206.959	103,48
34		5,28	3,55	<b>1.009</b>	102,89	226.832	113,42	<b>1.058</b>	107,89	237.848	118,92
34,93	1 3/8	5,54	3,73	<b>1.060</b>	108,09	238.297	119,15	<b>1.112</b>	113,39	249.987	124,99
36		5,90	3,97	<b>1.124</b>	114,62	252.685	126,34	<b>1.179</b>	120,22	265.050	132,52
38	1 1/2	6,40	4,30	<b>1.240</b>	126,44	278.763	139,38	<b>1.301</b>	132,67	292.476	146,24
40		7,13	4,79	<b>1.371</b>	139,80	308.213	154,11	<b>1.438</b>	146,64	323.275	161,64
41,28	1 5/8	7,70	5,17	<b>1.483</b>	151,22	333.392	166,70	<b>1.555</b>	158,57	349.578	174,79
42		7,83	5,26	<b>1.503</b>	153,26	337.888	168,94	<b>1.577</b>	160,81	354.524	177,26
43		8,29	5,57	<b>1.611</b>	164,28	362.167	181,08	<b>1.690</b>	172,33	379.927	189,96
44		8,64	5,80	<b>1.678</b>	171,11	377.229	188,61	<b>1.759</b>	179,37	395.439	197,72
44,45	1 3/4	8,92	5,99	<b>1.719</b>	175,29	386.446	193,22	<b>1.802</b>	183,75	405.106	202,55
45		9,09	6,11	<b>1.749</b>	178,35	393.191	196,60	<b>1.834</b>	187,02	412.300	206,15
46		9,47	6,36	<b>1.820</b>	185,59	409.152	204,58	<b>1.909</b>	194,66	429.160	214,58
47,63	1 7/8	10,18	6,84	<b>1.964</b>	200,27	441.525	220,76	<b>2.060</b>	210,06	463.106	231,55
48		10,28	6,91	<b>1.985</b>	202,41	446.246	223,12	<b>2.082</b>	212,30	468.052	234,03
50		11,22	7,54	<b>2.176</b>	221,89	489.184	244,59	<b>2.283</b>	232,80	513.239	256,62
50,80	2	11,65	7,83	<b>2.230</b>	227,40	501.324	250,66	<b>2.300</b>	234,53	517.060	258,53

# OLIVEIRA LT 24 K



## PROPERTIES



## APPLICATIONS

Recommended for intensive use and severe hoist applications where rotation resistance property is required like e.g. tower cranes. If you intend to use a swivel please check first with the manufacturer.

## OVERVIEW

RCN	Diameter range [mm]	Construction	Number of outer strands	Number of wires	Number of outer load bearing wires	Average fill factor	Average spin factor
23-1	7,20 – 20	24xK7	12	169	84	0,683	*N/mm <sup>2</sup> 0,84 (1960*)
25	21 – 48	24xK17	12	289	204	0,694	

- Temperature range of use: -50°C to +75°C
- Available in Lang's lay
- Available in right hand and left hand

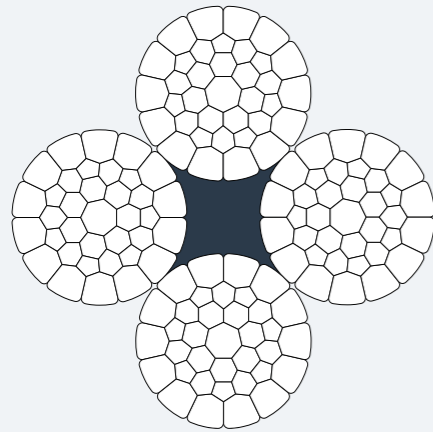
nominal diameter		weight		minimum breaking force			
mm	inch	kg/m	lb/ft	1960 N/mm <sup>2</sup>			
				kN	t [metric]	lbs	t[2000lbs]
7,20		0,23	0,15	<b>43,7</b>	4,46	9.824	4,91
8	5/16	0,28	0,19	<b>55,1</b>	5,62	12.387	6,19
9		0,36	0,24	<b>69,6</b>	7,10	15.647	7,82
9,53	3/8	0,40	0,27	<b>77,3</b>	7,88	17.378	8,69
10		0,46	0,31	<b>88,2</b>	8,99	19.828	9,91
11	7/16	0,56	0,38	<b>107,6</b>	10,97	24.189	12,09
12		0,67	0,45	<b>128,0</b>	13,05	28.776	14,39
12,70	1/2	0,75	0,50	<b>142,3</b>	14,51	31.990	16,00
13		0,78	0,52	<b>149,1</b>	15,20	33.519	16,76
14		0,91	0,61	<b>175,0</b>	17,85	39.342	19,57
15		1,05	0,71	<b>198,0</b>	20,19	44.512	22,26
15,88	5/8	1,17	0,78	<b>222,5</b>	22,69	50.020	25,01
16		1,20	0,81	<b>229,6</b>	23,41	51.616	25,81
17		1,34	0,90	<b>255,5</b>	26,05	57.439	28,72
18		1,51	1,01	<b>294,1</b>	29,99	66.116	33,06
19	3/4	1,69	1,14	<b>323,5</b>	32,99	72.726	36,36
20		1,88	1,27	<b>353,7</b>	36,07	79.515	39,76
21		2,10	1,41	<b>401,9</b>	40,99	90.360	45,18
22		2,28	1,53	<b>432,7</b>	44,12	97.275	48,64
22,23	7/8	2,29	1,54	<b>436,0</b>	44,46	98.017	49,01
24		2,75	1,85	<b>526,2</b>	53,66	118.294	59,15
25,40	1	3,08	2,07	<b>575,0</b>	58,63	129.265	64,63
26		3,20	2,15	<b>610,0</b>	62,20	137.133	68,57
28		3,71	2,50	<b>705,7</b>	71,96	158.648	79,32
28,58	1 1/8	3,89	2,61	<b>743,8</b>	75,85	167.213	83,61
30		4,24	2,85	<b>807,8</b>	82,37	181.601	90,80
31,75	1 1/4	4,70	3,16	<b>910,0</b>	92,79	204.576	102,29
32		4,80	3,23	<b>934,6</b>	95,30	210.106	105,05
34		5,48	3,68	<b>1.047</b>	106,76	235.375	117,69
34,93	1 3/8	5,77	3,87	<b>1.090</b>	111,15	245.042	122,52
35		5,78	3,89	<b>1.108</b>	112,98	249.088	124,54
36		6,13	4,12	<b>1.165</b>	118,80	261.902	130,95
38	1 1/2	6,78	4,55	<b>1.295</b>	132,05	291.128	145,56
40		7,64	5,14	<b>1.429</b>	145,72	321.252	160,63
41		8,04	5,40	<b>1.498</b>	152,75	336.764	168,38
41,28	1 5/8	8,08	5,43	<b>1.503</b>	153,26	337.888	168,94
42		8,37	5,62	<b>1.572</b>	160,30	353.400	176,70
44		9,17	6,16	<b>1.713</b>	174,68	385.098	192,55
44,45	1 3/4	9,40	6,32	<b>1.765</b>	179,98	396.788	198,39
46		9,95	6,69	<b>1.861</b>	189,77	418.369	209,18
47,63	1 7/8	10,61	7,13	<b>1.990</b>	202,92	447.370	223,68
48		10,94	7,35	<b>2.054</b>	209,45	461.757	230,88



## SEMI-ROTATION-RESISTANT ROPES

- Designed to generate only small levels of torque and rotation when loaded.
- Designed without any rope core.
- The outer strands have an extremely long lay length and therefore almost no tendency to start to rotate under load.

# OLIVEIRA DC 4 K



## PROPERTIES



## APPLICATIONS

Semi-rotation resistant hoist rope for deck crane applications and for electrical hoists with twin-hoist system and greater lifting height.

## OVERVIEW

RCN	Diameter range [mm]	Construction	Number of outer strands	Number of wires	Number of outer load bearing wires	Average fill factor	Average spin factor
22	30 – 36	4xK36-CF	4	144	56	0,669	0,811 (1960 *)

- Temperature range of use: -50°C to +75°C
- Tensile strength: 1960 N/mm<sup>2</sup>
- Available in ordinary lay
- Available in right hand

### minimum breaking force

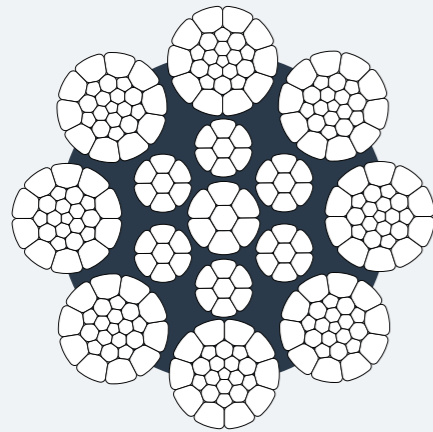
nominal diameter		weight		1960 N/mm <sup>2</sup>				2160 N/mm <sup>2</sup>			
mm	inch	kg/m	lb/ft	kN	t [metric]	lbs	t[2000lbs]	kN	t [metric]	lbs	t[2000lbs]
14		0,88	0,59	<b>178,0</b>	18,15	40,010	20,01	<b>187,1</b>	19,07	42,051	21,03
15		1,01	0,68	<b>204,2</b>	20,83	45,914	22,96	<b>214,7</b>	21,89	48,257	24,13
16	5/8"	1,14	0,77	<b>230,0</b>	23,46	51,713	25,86	<b>241,8</b>	24,65	54,352	27,18
17		1,33	0,90	<b>269,0</b>	27,43	60,465	30,23	<b>282,7</b>	28,83	63,550	31,78
18		1,43	0,96	<b>288,3</b>	29,40	64,819	32,41	<b>303,0</b>	30,90	68,126	34,06
19	3/4"	1,64	1,10	<b>331,5</b>	33,81	74,529	37,26	<b>348,4</b>	35,53	78,331	39,17
20		1,82	1,22	<b>367,1</b>	37,44	82,531	41,27	<b>385,8</b>	39,35	86,742	43,37
21		1,97	1,32	<b>397,1</b>	40,49	89,276	44,64	<b>417,4</b>	42,56	93,830	46,92
22	7/8"	2,17	1,46	<b>438,9</b>	44,76	98,669	49,33	<b>461,3</b>	47,04	103,703	51,85
23		2,38	1,60	<b>479,7</b>	48,92	107,840	53,92	<b>504,2</b>	51,41	113,342	56,67
24		2,60	1,75	<b>513,5</b>	52,36	115,439	57,72	<b>539,7</b>	55,03	121,328	60,66
25		2,82	1,89	<b>555,1</b>	56,60	124,784	62,39	<b>583,4</b>	59,49	131,151	65,58
25,40	1"	2,82	1,89	<b>555,1</b>	56,60	124,784	62,39	<b>583,4</b>	59,49	131,151	65,58
26		3,00	2,02	<b>592,4</b>	60,41	133,185	66,59	<b>622,7</b>	63,49	139,980	69,99
27		3,31	2,23	<b>653,5</b>	66,64	146,919	73,46	<b>686,9</b>	70,04	154,415	77,21
28		3,55	2,39	<b>699,5</b>	71,33	157,265	78,63	<b>735,2</b>	74,97	165,289	82,64
29		3,79	2,55	<b>747,0</b>	76,18	167,943	83,97	<b>785,2</b>	80,06	176,511	88,26
30		4,00	2,69	<b>791,4</b>	80,70	177,918	88,96	<b>831,8</b>	84,82	186,995	93,50
31,75	1 1/4"	4,48	3,01	<b>884,5</b>	90,19	198,843	99,42	<b>923,7</b>	94,19	207,656	103,83
32		4,55	3,06	<b>896,6</b>	91,43	201,568	100,78	<b>942,4</b>	96,09	211,852	105,93
33,50		4,70	3,16	<b>940,9</b>	95,95	211,534	105,77	<b>989,0</b>	100,85	222,326	111,16
34		4,98	3,34	<b>998,6</b>	101,83	224,494	112,25	<b>1.050</b>	107,02	235,948	117,97
34,93	1 3/8"	5,39	3,62	<b>1.063</b>	108,41	238,999	119,50	<b>1.117</b>	113,94	251,193	125,60
35		5,39	3,62	<b>1.063</b>	108,41	238,999	119,50	<b>1.117</b>	113,94	251,193	125,60
36		5,73	3,85	<b>1.130</b>	115,20	253,981	126,99	<b>1.187</b>	121,08	266,939	133,47
38	1 1/2"	6,30	4,23	<b>1.244</b>	126,85	279,649	139,82	<b>1.307</b>	133,32	293,916	146,96



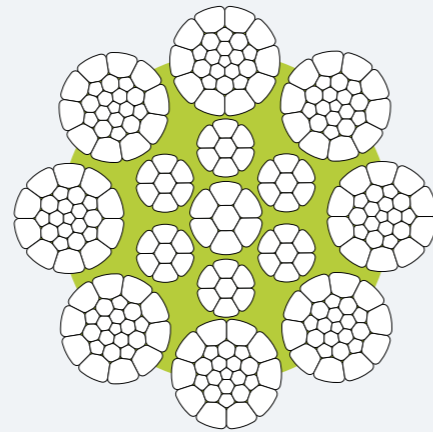
## NON-ROTATION-RESISTANT ROPES

- Generate high levels of torque and rotation when loaded. Due to that the non-rotation-resistant ropes (Rotational) must not be used with a swivel.
- Designed with at least two layers of strands laid helically around a center.
- The direction of lay of the outer strands being same to that of the underlying layer.

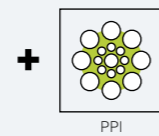
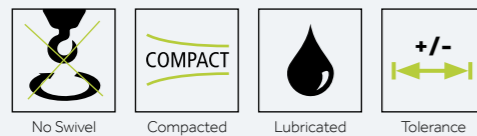
# OLIVEIRA HD 8 K



# OLIVEIRA HD 8 K PPI



## PROPERTIES



## APPLICATIONS

When rotation resistant ropes are not required (twin hoist systems with right and left ropes, small heights). Hoist for steel mill cranes, container cranes, floating cranes and boom hoist for deck cranes, luffing and mobile cranes, grab cranes.

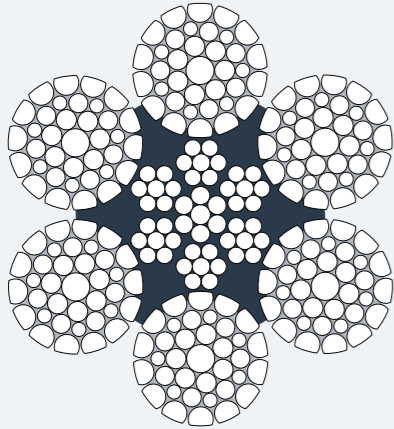
## OVERVIEW

RCN	Diameter range [mm]	Construction	Number of outer strands	Number of wires	Number of outer load bearing wires	Average fill factor	Average spin factor *N/mm²
03	8 – 11	8xK12	8	145	96	0,672	
03	12 – 14	8xK17	8	185	136	0,675	0,85 (1770*)
09	15 – 28,58	8xK26	8	257	208	0,677	0,85 (1960*)
11	30 – 42	8xK31	8	297	248	0,673	0,82 (2160*)
13	44 – 60	8xK36	8	407	288	0,683	
13	62 – 64	8xK36	8	475	288	0,671	0,84 (1770*) 0,83 (1960*)
>13	66 – 72	8xK41	8	515	328	0,666	0,81 (2160*)

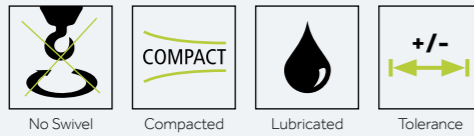
- Temperature range of use: -50°C to +75°C
- Please add 1.5% on the weight for ropes with PPI
- Available in ordinary lay and Lang's lay
- Available in right hand and left hand

nominal diameter		weight		minimum breaking force											
mm	inch	kg/m	lb/ft	1770 N/mm²		1960 N/mm²		1960 N/mm²		2160 N/mm²		2160 N/mm²			
				kN t [metric]	lbs t [2000lbs]	kN t [metric]	lbs t [2000lbs]	kN t [metric]	lbs t [2000lbs]	kN t [metric]	lbs t [2000lbs]				
8	5/16	0,30	0,20	50,4	5,14	11,328	5,66	55,8	5,69	12,544	6,27	57,7	5,88	12,971	6,49
9		0,37	0,25	63,3	6,46	14,235	7,12	70,1	7,15	15,763	7,88	73,6	7,50	16,535	8,27
9,53	3/8	0,39	0,26	66,8	6,81	15,016	7,51	74,0	7,54	16,627	8,31	79,6	8,12	17,899	8,95
10		0,45	0,30	78,3	7,98	17,600	8,80	86,7	8,84	19,489	9,74	92,4	9,42	20,772	10,39
11	7/16	0,57	0,38	96,7	9,86	21,732	10,87	107,0	10,92	24,064	12,03	112,0	11,42	25,179	12,59
12		0,65	0,44	115,1	11,74	25,876	12,94	126,4	12,89	28,415	14,21	132,6	13,52	29,800	14,90
12,70	1/2	0,71	0,48	124,4	12,69	27,966	13,98	138,0	14,07	31,015	15,51	144,7	14,76	32,530	16,26
13		0,77	0,52	136,6	13,93	30,709	15,35	149,0	15,19	33,491	16,75	156,2	15,93	35,123	17,56
14		0,90	0,61	157,9	16,10	35,497	17,75	174,8	17,82	39,297	19,65	187,0	19,07	42,039	21,02
15		1,03	0,69	180,0	18,35	40,466	20,23	202,7	20,67	45,569	22,78	214,0	21,82	48,109	24,05
15,88	5/8	1,15	0,77	200,0	20,39	44,962	22,48	220,0	22,43	49,458	24,73	235,0	23,96	52,830	26,42
16		1,16	0,78	204,0	20,80	45,861	22,93	229,4	23,39	51,571	25,79	242,4	24,72	54,494	27,25
17		1,30	0,87	227,0	23,15	51,032	25,52	250,0	25,49	56,202	28,10	267,0	27,23	60,024	30,01
18		1,49	1,00	260,2	26,53	58,495	29,25	288,2	29,39	64,790	32,39	307,0	31,31	69,016	34,51
19	3/4	1,64	1,10	292,1	29,79	65,667	32,83	323,5	32,99	72,726	36,36	342,0	34,87	76,885	38,44
20		1,84	1,23	321,0	32,73	72,164	36,08	355,5	36,25	79,920	39,96	379,0	38,65	85,203	42,60
22		2,21	1,49	391,7	39,94	88,058	44,03	433,7	44,23	97,500	48,75	458,5	46,75	103,075	51,54
22,23	7/8	2,26	1,52	394,9	40,27	88,784	44,39	435,0	44,36	97,792	48,90	462,0	47,11	103,862	51,93
24		2,63	1,77	464,5	47,37	104,424	52,21	514,3	52,44	115,619	57,81	556,0	56,70	124,994	62,50
25		2,86	1,92	504,2	51,41	113,349	56,67	558,2	56,92	125,488	62,74	602,0	61,39	135,335	67,67
25,40	1	2,94	1,98	519,0	52,92	116,676	58,34	572,0	58,33	128,591	64,30	611,0	62,30	137,358	68,68
26		3,13	2,10	548,9	55,97	123,398	61,70	607,8	61,98	136,639	68,32	655,0	66,79	147,250	73,62
28		3,60	2,42	629,6	64,20	141,540	70,77	697,3	71,10	156,759	78,38	748,0	76,27	168,157	84,08
28,58	1 1/8	3,67	2,46	638,0	65,06	143,428	71,71	707,0	72,09	158,940	79,47	751,0	76,58	168,831	84,42
30		4,12	2,77	727,1	74,14	163,459	81,73	803,0	81,88	180,522	90,26	864,0	88,10	194,235	97,12
31,75	1 1/4	4,59	3,09	812,0	82,80	182,545	91,27	895,0	91,26	201,204	100,60	951,0	96,98	213,793	106,90
32		4,67	3,14	828,0	84,43	186,142	93,07	911,0	92,90	204,801	102,40	968,0	98,71	217,615	108,81
34		5,29	3,56	936,4	95,49	210,511	105,26	1.025	104,52	230,429	115,21	1.091	111,25	245,267	122,63
34,93	1 3/8	5,51	3,70	954,0	97,28	214,468	107,23	1.057	107,78	237,623	118,81	1.109	113,09	249,313	124,66
36		5,84	3,93	1.040	106,05	233,801	116,90	1.150	117,27	258,530	129,27	1.217	124,10	273,592	136,80
38	1 1/2	6,58	4,42	1.159	118,19	260,554	130,28	1.271	129,61	285,732	142,87	1.332	135,83	299,445	149,72
40		7,30	4,90	1.285	131,03	288,879	144,44	1.410	143,78	316,981	158,49	1.478	150,71	332,268	166,13
41,28	1 5/8	7,47	5,02	1.305	133,07	293,376	146,69	1.464	149,29	329,120	164,56	1.535	156,53	345,082	172,54
42		7,98	5,36	1.403	143,07	315,407	157,70	1.538	156,83	345,756	172,88	1.613	164,48	362,617	181,31
44		9,00	6,05	1.554	158,46	349,353	174,68	1.736	177,02	390,268	195,13	1.820	185,59	409,152	204,58
44,45	1 3/4	9,04	6,08	1.572	160,30	353,400	176,70	1.743	177,74	391,842	195,92	1.828	186,40	410,951	205,48
46		9,78	6,57	1.713	174,68	385,098	192,55	1.883	192,01	423,315	211,66	1.975	201,39	443,998	222,00
47,63	1 7/8	10,40	6,99	1.774	180,90	398,811	199,41	1.964	200,27	441,525	220,76	2.112	215,36	474,796	237,40
48		10,61	7,13	1.858	189,46	417,695	208,85	2.055	209,55	461,982	230,99	2.155	219,75	484,463	242,23
50		11,62	7,81	1.986	202,52	446,470	223,24	2.253	229,74	506,494	253,25	2.362	240,86	530,999	265,50
50,80	2	11,87	7,98	2.044	208,43	459,509	229,75	2.283	232,80	513,239	256,62	2.394	244,12	538,193	269,10
52		12,51	8,41	2.147	218,93	482,665	241,33	2.427	247,49	545,611	272,81	2.545	259,52	572,139	286,07
54	2 1/8	13,49	9,07	2.316	236,17	520,657	260,33	2.607	265,84	586,077	293,04	2.734	278,79	614,628	307,31
56		14,59	9,80	2.480	252,89	557,526	278,76	2.800	285,52	629,465	314,73	2.925	298,27	657,566	328,78
57,15	2 1/4	14,92	10,03	2.572	262,27	578,208	289,10	2.849	290,52	640,481	320,24	3.010	306,93	676,675	338,34
58		15,67	10,53	2.649	270,12	595,519	297,76	2.957	301,53	664,760	332,38	3.102	316,32	697,357	348,68
60		16,71	11,23	2.842	289,80	638,907	319,45	3.143	320,50	706,574	353,29	3.297	336,20	741,195	370,60
60,33	2 3/8	16,71	11,23	2.844	290,01	639,357	319,68	3.147	320,90	707,474	353,74	3.301	336,61	742,094	371,05
62		17,45	11,73	2.969	302,75	667,458	333,73	3.277	334,16	736,699	368,35	3.448	351,60	775,141	387,57
63,50	2 1/2	18,15	12,20	3.092	315,30	695,109	347,55	3.424	349,15	769,746	384,87	3.591	366,18	807,289	403,64
64		18,66	12,54	3.200	326,31	719,388	359,69	3.509	357,82	788,854	394,43	3.680	375,26	827,297	413,65
66		19,67	13,22	3.389	345,58	761,877	380,94	3.708	378,11	833,591	416,80	3.896	397,28	875,855	437,93
66,68	2 5/8	19,94	13,40	3.405	347,21	765,474	382,74	3.760	383,41	845,281	422,64	3.954	403,20	888,894	444,45
68		20,81	13,98	3.565	363,53	801,444	400,72	3.924	400,14	882,150	441,08	4.117	419,82	925,538	462,77
70	2 3/4	21,69	14,57	3.733	380,66	839,212	419,61	4.026	410,54	905,081	452,54	4.330	441,54	973,423	486,71
72		23,26	15,63	3.965	404,32	891,367	445,68	4.250	433,38	955,438	477,72	4.570	466,01	1.027,377	513,69

# OLIVEIRA SC 6 K



## PROPERTIES



## APPLICATIONS

Can be used for all hoist and pulling applications when a higher MBL instead of 6 strands conventional ropes is required. Manufacturing of slings with a high MBL. Mainly used for logging (forest industry).

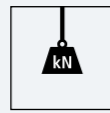
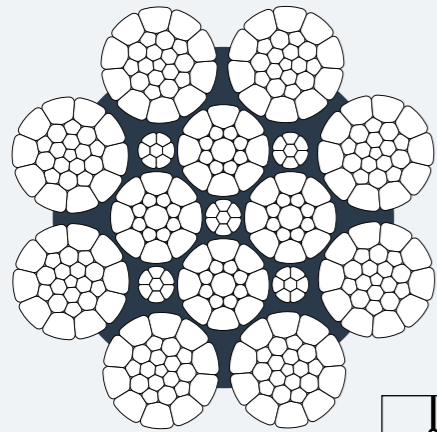
## OVERVIEW

RCN	Diameter range [mm]	Construction	Number of outer strands	Number of wires	Number of outer load bearing wires	Average fill factor	Average spin factor
02	10 – 13	6xK19	6	163	114	0,666	0,86 (1960*)
06	14 – 19	6xK26	6	205	156	0,663	
08	20 – 29	6xK31	6	235	186	0,675	0,84 (1960*)
09	30 – 60	6xK36	6	265	216	0,675	

- Temperature range of use: -50°C to +75°C
- Available in ordinary lay and Lang's lay
- Available in right hand and left hand

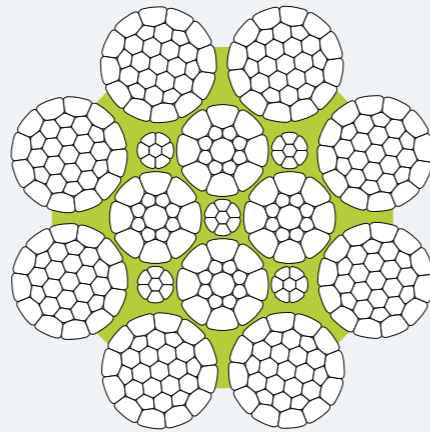
nominal diameter		weight		minimum breaking force			
				1960 N/mm <sup>2</sup>			
mm	inch	kg/m	lb/ft	kN	t [metric]	lbs	t[2000lbs]
10		0,45	0,30	<b>87,7</b>	8,94	19.716	9,86
11	7/16	0,54	0,37	<b>107,0</b>	10,91	24.055	12,03
12		0,64	0,43	<b>125,8</b>	12,83	28.292	14,15
12,70	1/2	0,73	0,49	<b>138,0</b>	14,07	31.024	15,51
13		0,77	0,52	<b>150,1</b>	15,31	33.744	16,87
14		0,89	0,60	<b>169,3</b>	17,26	38.052	19,03
15		1,00	0,67	<b>190,9</b>	19,47	42.916	21,46
15,88	5/8	1,11	0,74	<b>209,0</b>	21,31	46.985	23,49
16		1,15	0,77	<b>218,8</b>	22,31	49.190	24,59
17		1,31	0,88	<b>250,5</b>	25,54	56.315	28,16
18		1,45	0,97	<b>276,7</b>	28,21	62.196	31,10
19	3/4	1,62	1,09	<b>311,1</b>	31,72	69.940	34,97
20		1,78	1,20	<b>344,8</b>	35,16	77.509	38,75
22		2,16	1,45	<b>419,0</b>	42,73	94.195	47,10
22,23	7/8	2,24	1,50	<b>420,0</b>	42,83	94.420	47,21
24		2,61	1,76	<b>504,3</b>	51,42	113.371	56,69
25		2,80	1,88	<b>542,5</b>	55,32	121.959	60,98
25,40	1	2,91	1,96	<b>565,2</b>	57,63	127.062	63,53
26		3,09	2,07	<b>598,2</b>	61,00	134.481	67,24
28		3,54	2,38	<b>681,6</b>	69,50	153.228	76,61
28,58	1 1/8	3,65	2,45	<b>687,0</b>	70,05	154.444	77,22
29		3,81	2,56	<b>737,7</b>	75,22	165.842	82,92
30		4,11	2,76	<b>786,6</b>	80,21	176.826	88,41
31,75	1 1/4	4,58	3,07	<b>850,0</b>	86,68	191.088	95,54
32		4,61	3,09	<b>890,9</b>	90,84	200.276	100,14
34		5,22	3,51	<b>1.011</b>	103,09	227.282	113,64
34,93	1 3/8	5,56	3,74	<b>1.030</b>	105,03	231.553	115,78
35		5,56	3,74	<b>1.050</b>	107,07	236.049	118,02
36		5,85	3,93	<b>1.131</b>	115,33	254.259	127,13
38	1 1/2	6,51	4,38	<b>1.261</b>	128,59	283.484	141,74
40		7,23	4,86	<b>1.401</b>	142,86	314.957	157,48
41,28	1 5/8	7,77	5,22	<b>1.450</b>	147,86	325.973	162,99
42		7,91	5,32	<b>1.530</b>	156,02	343.958	171,98
44		8,80	5,91	<b>1.701</b>	173,45	382.400	191,20
44,45	1 3/4	8,96	6,02	<b>1.710</b>	174,37	384.423	192,21
46		9,55	6,41	<b>1.847</b>	188,34	415.222	207,61
47,63	1 7/8	10,34	6,95	<b>1.940</b>	197,82	436.129	218,06
48		10,40	6,99	<b>2.012</b>	205,17	452.316	226,16
50		11,32	7,61	<b>2.178</b>	222,09	489.634	244,82
50,80	2	11,54	7,75	<b>2.182</b>	222,50	490.533	245,27
52		12,18	8,19	<b>2.340</b>	238,61	526.053	263,03
54	2 1/8	12,97	8,71	<b>2.460</b>	250,85	553.030	276,51
56		14,01	9,41	<b>2.649</b>	270,12	595.519	297,76
57,15	2 1/4	14,64	9,84	<b>2.758</b>	281,24	620.023	310,01
58		15,01	10,09	<b>2.840</b>	289,60	638.457	319,23
60		16,06	10,79	<b>3.040</b>	309,99	683.419	341,71

## OLIVEIRA DP 8 K

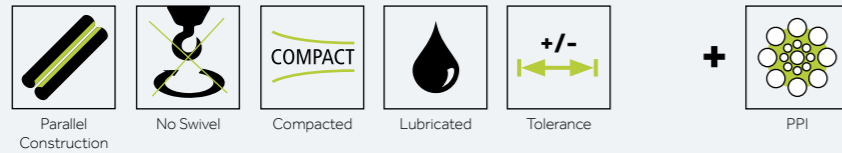


High breaking force

## OLIVEIRA DP 8 K PPI



### PROPERTIES



### APPLICATIONS

When an extremely high MBL is required for a multipart reeving hoist system: electric hoists, twin hoists systems, boom hoist and pendant rope for mobile cranes, tower cranes and all marine equipments.

### OVERVIEW

RCN	Diameter range [mm]	Construction	Number of outer strands	Number of wires	Number of outer load bearing wires	Average fill factor	Average spin factor
03	6,40 – 7,20	8xK12	8	105	96	0,701	0,86 (2160*)
03	8 – 17	8xK17	8	239	136	0,710	
09	18 – 28,58	8xK26	8	311	208	0,712	
11	30 – 38	8xK31	8	351	248	0,721	

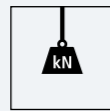
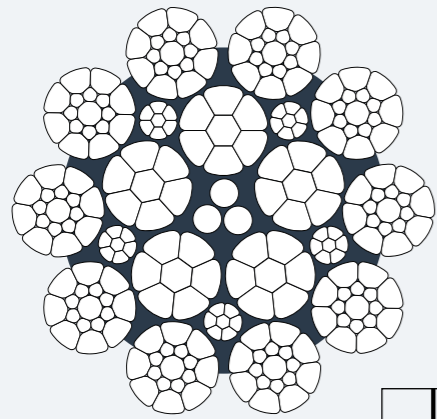
- Temperature range of use: -50°C to +75°C
- Please add 1.5% on the weight for ropes with PPI
- Available in ordinary lay and Lang's lay
- Available in right hand and left hand
- Fleet angle must be < 1° 30'

### minimum breaking force

nominal diameter		weight		2160 N/mm <sup>2</sup>			
mm	inch	kg/m	lb/ft	kN	t [metric]	lbs	t[2000lbs]
6,40		0,19	0,13	<b>41,4</b>	4,22	9.307	4,65
7		0,23	0,16	<b>50,5</b>	5,15	11.353	5,68
7,20		0,25	0,16	<b>53,2</b>	5,42	11.960	5,98
8	5/16	0,30	0,20	<b>64,1</b>	6,54	14.410	7,21
8,50		0,34	0,23	<b>73,3</b>	7,47	16.478	8,24
9		0,39	0,26	<b>82,3</b>	8,39	18.502	9,25
9,53	3/8	0,43	0,29	<b>92,2</b>	9,40	20.727	10,36
10		0,48	0,32	<b>102,4</b>	10,44	23.020	11,51
11	7/16	0,57	0,38	<b>123,1</b>	12,55	27.674	13,84
12		0,68	0,46	<b>147,3</b>	15,02	33.114	16,56
12,70	1/2	0,76	0,51	<b>159,0</b>	16,21	35.745	17,87
13		0,82	0,55	<b>176,3</b>	17,98	39.634	19,82
14		0,93	0,63	<b>202,6</b>	20,66	45.546	22,77
15		1,09	0,73	<b>236,9</b>	24,16	53.262	26,63
15,88	5/8	1,21	0,82	<b>254,4</b>	25,94	57.191	28,60
16		1,22	0,82	<b>263,9</b>	26,91	59.325	29,66
17		1,40	0,94	<b>302,8</b>	30,88	68.072	34,04
18		1,54	1,04	<b>335,3</b>	34,19	75.374	37,69
19	3/4	1,73	1,16	<b>375,8</b>	38,32	84.491	42,25
20		1,90	1,27	<b>410,9</b>	41,90	92.364	46,18
22		2,31	1,55	<b>500,8</b>	51,07	112.584	56,29
22,23	7/8	2,35	1,58	<b>503,0</b>	51,29	113.079	56,54
24		2,81	1,89	<b>607,0</b>	61,90	136.459	68,23
25,40	1	3,06	2,05	<b>649,0</b>	66,18	145.901	72,95
26		3,23	2,17	<b>701,1</b>	71,49	157.618	78,81
28		3,74	2,51	<b>809,5</b>	82,55	181.983	90,99
28,58	1 1/8	3,89	2,61	<b>820,0</b>	83,62	184.343	92,17
30		4,34	2,92	<b>942,1</b>	96,06	211.782	105,89
31,75	1 1/4	4,85	3,26	<b>1.023</b>	104,32	229.980	114,99
32		4,90	3,29	<b>1.066</b>	108,70	239.646	119,82
34		5,62	3,77	<b>1.220</b>	124,41	274.267	137,13
34,93	1 3/8	5,84	3,93	<b>1.231</b>	125,53	276.740	138,37
36		6,25	4,20	<b>1.357</b>	138,38	305.066	152,53
38	1 1/2	7,00	4,71	<b>1.523</b>	155,30	342.384	171,19



# OLIVEIRA DP 10 K



High breaking force

## PROPERTIES



## APPLICATIONS

When an extremely high MBL is required for a multipart reeving hoist system: electric hoists, twin hoist systems, boom hoist and pendant rope for mobile cranes, tower cranes and all marine equipment.

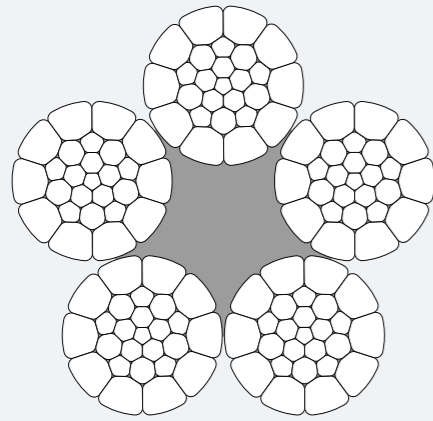
## OVERVIEW

RCN	Diameter range [mm]	Construction	Number of outer strands	Number of wires	Number of outer load bearing wires	Average fill factor	Average spin factor
05	14 – 18	10xK17	10	243	170	0,750	0,85 (2160*)

- Temperature range of use: -50°C to +75°C
- Available in ordinary lay and Lang's lay
- Available in right hand and left hand

nominal diameter		weight		minimum breaking force			
				2160 N/mm <sup>2</sup>			
mm	inch	kg/m	lb/ft	kN	t [metric]	lbs	t [2000lbs]
14		0,99	0,66	<b>214,5</b>	21,88	48.226	24,11
16		1,29	0,87	<b>279,9</b>	28,54	62.919	31,46
18		1,60	1,07	<b>338,0</b>	34,47	75.985	37,99

# OLIVEIRA LP 5



## PROPERTIES



## APPLICATIONS

Suspended gondolas and platforms.  
Jaw pulling device.  
Overhead cranes and electric hoists.  
Wind mill hoists and forest winches.

## OVERVIEW

RCN	Diameter range [mm]	Construction	Number of outer strands	Number of wires	Number of outer load bearing wires	Average fill factor	Average spin factor
02	6	5x K12-CWP*	5	78	60	0,633	
03	8,30–10,30	5x K19-CF	5	95	95	0,544	0,86 (1960*) 0,84 (2160*)
05	11,50–14	5x K26-CF	5	130	130	0,550	
06	16,3	5x K31-CF	5	155	155	0,533	

- Temperature range of use: -50°C to +75°C
- Available in ordinary lay and Lang's lay
- Available in right hand and left hand

\* core with 6x3 = 18 wires

nominal diameter		weight		minimum breaking force							
				1960 N/mm <sup>2</sup>				2160 N/mm <sup>2</sup>			
mm	inch	kg/m	lb/ft	kN	t [metric]	lbs	t[2000lbs]	kN	t [metric]	lbs	t[2000lbs]
6		0,15	0,10	<b>30,2</b>	3,08	6.791	3,40	<b>31,7</b>	3,23	7.124	3,56
8,30		0,26	0,18					<b>54,3</b>	5,53	12.198	6,10
9		0,32	0,22					<b>66,9</b>	6,82	15.040	7,52
9,50		0,34	0,23					<b>69,1</b>	7,05	15.544	7,77
10,30		0,40	0,27					<b>82,0</b>	8,36	18.433	9,22
11,50		0,49	0,33	<b>93,9</b>	9,58	21.110	10,55				
11,60		0,50	0,34	<b>95,2</b>	9,71	21.410	10,71				
14		0,77	0,52					<b>157,9</b>	16,11	35.507	17,75
16,30		0,98	0,66	<b>187,8</b>	19,15	42.229	21,11				

# DISCARD CRITERIA

## DISCARD CRITERIA ACCORDING TO ISO 4309:2010

Wire ropes should be visually inspected at frequent intervals by a competent person to make sure that the rope is in a safe condition and has not reached one of the following criteria:

- 1) Visible broken wires (see the following tables)
- 2) Reduction in rope diameter
- 3) Fracture of strands
- 4) Corrosion
- 5) Deformation and damage

## SINGLE-LAYER AND PARALLEL-CLOSED ROPES

Number of visible broken wires for ropes working in steel sheaves.

NOTE: Ropes having outer strands of Seale construction where the number of wires in each strand is 19 or less (e.g. 6 × 19 Seale) are placed in this table two rows above that row in which the construction would normally be placed based on the number of load bearing wires in the outer layer of strands.

		Number of visible broken outer wires <sup>2)</sup>					
		Rope working (single-layer drum)				Rope spooling (multi-layer drum) <sup>3)</sup>	
		Sections of rop working in steel sheaves and/or spooling on a single-layer drum				Sections of rope spooling on a multi-layer drum	
		Classes M1 to M4 or class unknown <sup>4)</sup>				All classes	
RCN	Number of load-bearing wires in the outer strands of the rope <sup>1)</sup> <sub>n</sub>	Ordinary lay (sZ, zS)		Lang lay (sS, zZ)		Ordinary and Lang lay	
		Over a length of 6d <sup>5)</sup>	Over a length of 30d <sup>5)</sup>	Over a length of 6d <sup>5)</sup>	Over a length of 30d <sup>5)</sup>	Over a length of 6d <sup>5)</sup>	Over a length of 30d <sup>5)</sup>
01	n ≤ 50	2	4	1	2	4	8
02	51 ≤ n ≤ 75	3	6	2	3	6	12
03	76 ≤ n ≤ 100	4	8	2	4	8	16
04	101 ≤ n ≤ 120	5	10	2	5	10	20
05	121 ≤ n ≤ 140	6	11	3	6	12	22
06	141 ≤ n ≤ 160	6	13	3	6	12	26
07	161 ≤ n ≤ 180	7	14	4	7	14	28
08	181 ≤ n ≤ 200	8	16	4	8	16	32
09	201 ≤ n ≤ 220	9	18	4	9	18	36
10	221 ≤ n ≤ 240	10	19	5	10	20	38
11	241 ≤ n ≤ 260	10	21	5	10	20	42
12	261 ≤ n ≤ 280	11	22	6	11	22	44
13	281 ≤ n ≤ 300	12	24	6	12	24	48
	n > 300	0,04 × n	0,08 × n	0,02 × n	0,04 × n	0,08 × n	0,16 × n

1. For the purposes of this International Standard, Filler wires are not regarded as load-bearing wires and are not included in the values of n.
2. A broken wire has two ends (counted as one wire).
3. The values apply to deterioration that occurs at the cross-over zones and interference between wraps due to fleet angle effects (and not to those sections of rope which only work in sheaves and do not spool on the drum).
4. Twice the number of broken wires listed may be applied to ropes on mechanisms whose classification is known to be M5 to M8.
5. d = nominal diameter of rope.

Classes M1 to M4 equates to mechanism group 1E<sub>m</sub> to 1A<sub>m</sub> | Classes M5 to M8 equates to mechanism group 2<sub>m</sub> to 5<sub>m</sub>  
Please pay attention to the country- / application-specific standards.

## ROTATION-RESISTANT ROPES

Number of visible broken wires for ropes working in steel sheaves.

NOTE: Ropes having outer strands of Seale construction where the number of wires in each strand is 19 or less (e.g. 18 × 19 Seale–WSC) are placed in this table two rows above that row in which the construction would normally be placed based on the number of wires in the outer layer of strands.

		Number of visible broken outer wires <sup>2)</sup>			
		Rope working on a single-layer drum		Rope spooling on a multi-layer drum <sup>3)</sup>	
		Sections of rop working in steel sheaves and/or spooling on a single-layer drum		Sections of rope spooling on a multi-layer drum	
RCN	Number of outer strands or number of load-bearing wires in the outer strands of the rope <sup>1)</sup> <sub>n</sub>	Over a length of 6d <sup>4)</sup>	Over a length of 30d <sup>4)</sup>	Over a length of 6d <sup>4)</sup>	Over a length of 30d <sup>4)</sup>
		21	4 strands n ≤ 100	2	4
22	3 or 4 strands n ≥ 100	2	4	4	8
11 or more outer strands					
23-1	71 ≤ n ≤ 100	2	4	4	8
23-2	101 ≤ n ≤ 120	3	5	5	10
23-3	121 ≤ n ≤ 140	3	5	6	11
24	141 ≤ n ≤ 160	3	6	6	13
25	161 ≤ n ≤ 180	4	7	7	14
26	181 ≤ n ≤ 200	4	8	8	16
27	201 ≤ n ≤ 220	4	9	9	18
28	221 ≤ n ≤ 240	5	10	10	19
29	241 ≤ n ≤ 260	5	10	10	21
30	261 ≤ n ≤ 280	6	11	11	22
31	281 ≤ n ≤ 300	6	12	12	24
	n > 300	6	12	12	24

1. For the purposes of this International Standard, Filler wires are not regarded as load-bearing wires and are not included in the values of n.
2. A broken wire has two ends.
3. The values apply to deterioration that occurs at the cross-over zones and interference between wraps due to fleet angle effects (and not to those sections of rope that only work in sheaves and do not spool on the drum).
4. d = nominal diameter of rope.

Please pay attention to the country- / application-specific standards.

## CONVERSION TABLE

### LENGTH

1m	3,28083	ft
1m	39,36997	inch
1 km	0,621371	miles
1 ft	0,3048	m
1 mile	1,609344	km
1 inch	0,0254	m

### TENSILE

1 N/mm <sup>2</sup>	0,101972	kp/mm <sup>2</sup>
1 N/mm <sup>2</sup>	145,037719	psi
1 N/mm <sup>2</sup>	10	bar
1 N/mm <sup>2</sup>	1	Mpa

### FORCE

1 kN	101,9716	kp
1 kN	0,1019716	metric tnf
1 kN	224,8089	lbf

### AREA

1 mm <sup>2</sup>	0,001550	in <sup>2</sup>
1 m <sup>2</sup>	10,76391	ft <sup>2</sup>
1 ft <sup>2</sup>	0,092903	m <sup>2</sup>
1 in <sup>2</sup>	645,16	mm <sup>2</sup>
1 m <sup>2</sup>	1,19599	yard <sup>2</sup>
1 yard <sup>2</sup>	0,836128	m <sup>2</sup>

### MASS

1 metric t	1000	kg
1 metric t	1,102311	short t
1 metric t	0,984207	long t
1 metric t	2204,623	lbs
1 lbs	0,453529	kg
1 long t	1,016047	metric t
1 short t	0,907185	metric t

### LENGTH MASS

1 kg/m	0,671970	lbs/ft
1 lbs/ft	1,488164	kg/m

## FORMER OLIVEIRA STEEL WIRE ROPES

### Rotation-resistant:

- LT 24 C
- LT 17
- LT 18

### Non-rotation-resistant:

- HD9K + PPI
- C8C + PPI
- 6x19S + IWRC / 6 x 36 WS + IWRC
- Ennelift
- 8x19 S+ FC (Sisal core)
- 6x19 S + FC (Polypropylene core)

Product specifications are subject to change without notice or obligation. The shown photographs, drawings or cross sections are only for illustrative purposes, the images can vary depending on requested diameter and current status of technical development.

The information supplied in this brochure is only a guideline for rope selection. Please contact us for any information or advice on the use of our ropes or if you have any doubt in selecting a rope for a specific application.

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